This document provides pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a minor, municipal permit. The discharge results from the operation of a 0.72 MGD wastewater treatment plant. This permit action consists of updating the proposed effluent limits to reflect the current Virginia WQS and updating permit language, as appropriate. This discharge is located in the Upper Machodoc Creek, approximately 800 feet from the confluence of the Potomac River. As such, the effluent limitations and special conditions contained within this permit will maintain the Water Quality Standards of both Maryland (COMAR 26.08.02 et seq.) and Virginia (9VAC25-260-00 et seq.).

1.	Facility Name and Mailing Address:	Naval Support Facility Dahlgren STP 18329 Thompson Road Suite 226 Dahlgren, VA 22448	SIC Code:	9711 National Security 8733 R&D 4952 WWTP
	Facility Location:	2 miles east of Route 301 & 226 Dahlgren, VA	County:	King George
	Facility Contact Name:	Brenna White / Water Media Manager	Telephone Number:	540-653-2341
2.	Permit No.:	VA0021067	Expiration Date:	30 May 2010
	Other VPDES Permits:	VA0073636 – Storm Water Industrial Permit – DEQ-NRO VAN010041 – Nutrient General Permit – DEQ-CO		
	Other Permits:	610024 – Underground Injection Control (UIC) Permit – EPA Region 3 VA7170024684 – RCRA – EPA Region 3 Registration Number 40307 – Air Permit – DEQ-NRO		
	E2/E3/E4 Status:	Not Applicable		
3.	Owner Name:	United States Department of the Navy		
	Owner Contact / Title:	Jeffery Bossart / Manager Installation Environmental Program	Telephone Number:	301-744-4705
4.	Application Complete Date:	4 December 2009		
	Permit Drafted By:	Douglas Frasier	Date Drafted:	31 August 2010
	Draft Permit Reviewed By:	Alison Thompson	Date Reviewed:	3 September 2010
		Bryant Thomas	Date Reviewed:	30 November 2010
	Public Comment Period:	Start Date: 11 February 2011	End Date:	14 March 2011
5.	Receiving Waters Information:	See **Attachment 1** for the Flow Frequency Determination.		
	Receiving Stream Name:	Upper Machodoc Creek	Stream Code:	1aUMC
	Drainage Area at Outfall:	51 square miles	River Mile:	1.84
	Stream Basin:	Potomac River	Subbasin:	Potomac River
	Section:	2	Stream Class:	II
	Special Standards:	a	Waterbody ID:	VAN-A30E
	7Q10 year round:	Tidal dilution 20:1	1Q10 year round:	Tidal dilution 10:1
	303(d) Listed:	Yes		
	TMDL Approved:	Yes – Polychlorinated Biphenyls		
	Date TMDL Approved:	31 October 2007		

6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

- ✓ State Water Control Law
- ✓ Clean Water Act
- ✓ VPDES Permit Regulation
- ✓ EPA NPDES Regulation
- EPA Guidelines
- ✓ Water Quality Standards
- ✓ Other: COMAR 26.08.02 et seq.

7. Licensed Operator Requirements: Class II

8. Reliability Class: Class I

9. Permit Characterization:

	Private	✓	Effluent Limited	✓	Possible Interstate Effect
✓	Federal	✓	Water Quality Limited		Compliance Schedule Required
	State	✓	Toxics Monitoring Program Required		Interim Limits in Permit
	POTW		Pretreatment Program Required		Interim Limits in Other Document
✓	TMDL				

10. Wastewater Sources and Treatment Description:

The Naval Support Facility Dahlgren is a wastewater treatment plant with a current design capacity of 0.72 MGD. The facility treats domestic discharge from the NSWC Dahlgren Naval Base with a population of approximately 8,600.

The facility consists of the following treatment processes: mechanical bar screen, primary clarifier, dual train bioreactor (anoxic/aerobic), secondary clarifiers, constructed wetlands, ultra-violet disinfection system, post aeration and finally discharging to Upper Machodoc Creek via Outfall 001.

See **Attachment 2** for a facility schematic/diagram.

TABLE 1
OUTFALL DESCRIPTION

Number	Discharge Sources	Treatment	Design Flow	Latitude / Longitude
001	Domestic wastewater	See Item 10 above.	0.72 MGD	38° 19' 15" N / 77° 01' 40" W

See **Attachment 3** for Dahlgren topographic map.

11. Sludge Treatment and Disposal Methods:

Sludge treatment consists of anaerobic digestion, lime addition for stabilization & pH adjustment prior to dewatering using a rotary fan press. The dewatered sludge is hauled to the King George County Landfill for disposal. An alternate disposal method is to haul liquid sludge to the Hopewell Wastewater Treatment Facility (VA0066630) for further treatment and final disposal via incineration.

This facility generated approximately 140 dry metric tons, 70 tons of which was incinerated.

It should be noted that the facility will be using aerobic processes for treatment before the end of 2010.

12. Other Discharges Located in Proximity to this Facility:

TABLE 2
DISCHARGES

Permit Number	Facility Name	Type	Receiving Stream
VA0026514	Dahlgren District WWTP	Municipal Discharge	Lower Williams Creek
VA0073636	USNSWC – Dahlgren	Stormwater Industrial	Several Outfalls: Upper Machodoc Creek Black Marsh, UT Gambo Creek Upper Machodoc, UT
VAR050866	B & M & King George Auto Parts	Stormwater Industrial	Upper Machodoc Creek

13. Material Storage:

TABLE 3 MATERIAL STORAGE	
Materials Description	Spill/Stormwater Prevention Measures
Lime	Stored under roof
Alum	Concrete containment unit within building
Glycerin (Bio-Carb)	Stored under roof

14. Site Inspection: Performed by Douglas Frasier on 2 November 2010 (see **Attachment 4**).

15. Receiving Stream Water Quality and Water Quality Standards:

a. Ambient Water Quality Data

This segment of Upper Machodoc Creek has been listed as impaired for not meeting the fish consumption and aquatic life uses which includes both the shallow water submerged aquatic vegetation and the open water aquatic life sub-use.

The fish consumption use is categorized as impaired due to Polychlorinated Biphenyls (PCBs). The Aquatic Life Use – Open Water Aquatic Life Sub Use impairment is based on low dissolved oxygen during the summer seasons while the Shallow Water Submerged Aquatic Vegetation Sub-Use impairment was determined by a vegetation evaluation.

The Potomac PCB TMDL was developed and approved by the Environmental Protection Agency on 31 October 2007. This facility will be required to monitor the effluent for PCBs during both dry and wet weather. This data will be utilized by DEQ for implementation of this TMDL.

The TMDL for the Aquatic Life Use (SAV and Open Water) is due 2010.

Significant portions of the Chesapeake Bay and its tributaries are listed as impaired on Virginia's 303(d) list of impaired waters for not meeting the aquatic life use support goal and the 2008 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report indicates that much of the mainstem Bay does not fully support this use support goal under Virginia's Water Quality Assessment guidelines. Nutrient enrichment is cited as one of the primary causes of impairment.

In response, the Virginia General Assembly amended the State Water Control Law in 2005 to include the *Chesapeake Bay Watershed Nutrient Credit Exchange Program.* This statute set forth total nitrogen and total phosphorus discharge restrictions within the bay watershed. Concurrently, the State Water Control Board adopted new water quality criteria for the Chesapeake Bay and its tidal tributaries. These actions necessitate the evaluation and the inclusion of nitrogen and phosphorus limits on discharges within the bay watershed.

b. Receiving Stream Water Quality Criteria

Part IX of 9VAC25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream, Upper Machodoc Creek, is located within Section 2 of the Potomac River Basin and classified as Class II water.

Class II tidal waters in the Chesapeake Bay and its tidal tributaries must meet dissolved oxygen concentrations as specified in 9VAC25-260-185 and maintain a pH of 6.0 – 9.0 standard units as specified in 9VAC25-260-50. In the Northern Virginia area, Class II waters must meet the Migratory Fish Spawning and Nursery Designated Use from February 1 through May 31. For the remainder of the year, these tidal waters must meet the Open Water use. The applicable dissolved oxygen concentrations are presented **Attachment 5**.

Attachment 6 details Virginia water quality criteria applicable to the receiving stream.

As stated earlier, the discharge from this facility is approximately 800 feet from the confluence of the Potomac River and has the potential to affect Maryland waters. Title 26, Subtitle 08 of the Code of Maryland Regulations (Maryland Water Quality Standards) has been reviewed and the proposed limitations contained within comply with these regulations.

This portion of the Potomac River has been designated as Use II water. The designated uses present in this segment are: Migratory Spawning and Nursery Use (February 1 to May 31); Shallow Water Submerged Aquatic Vegetation Use (April 1 to October 30); Open Water Fish and Shellfish Use (January 1 to December 31); Seasonal Deep Water Fish and Shellfish Use (June 1 to September 30); Seasonal Deep Channel Refuge Use (June 1 to September 30); and Shellfish Harvest.

The aforementioned designations provide for various dissolved oxygen (D.O.) concentrations during different periods of the year. The following is applicable to the Open Water Fish and Shellfish Subcategory and is the most stringent:

1). Greater than or equal to 5.5 mg/L for a 30-day averaging period year-round in tidal fresh waters (salinity less than or equal to 0.5 parts per thousand);

2). Greater than or equal to 5 mg/L for a 30-day averaging period year-round (salinity greater than 0.5 parts per thousand);

3). Greater than or equal to 4.0 mg/L for a 7-day averaging period year-round;

4). Greater than or equal to 3.2 mg/L as an instantaneous minimum year-round; and

5). For protection of the endangered shortnose sturgeon, greater than or equal to 4.3 mg/L as an instantaneous minimum at water column temperatures greater than 29° C (77° F).

pH values may not be less than 6.5 or greater than 8.5 standard units (S.U.).

Ammonia:

During the 1994 permit reissuance, staff utilized a default temperature value of 30° C and a pH value of 8.0 S.U. to ascertain the ammonia criteria. These values and subsequent limitations were carried forward with each reissuance thereafter. It is staff's best professional judgement that a temperature value of 25° C and a pH value of 8.0 S.U. be utilized per current agency guidance to calculate the ammonia criteria for this reissuance (**Attachment 6**).

These values were compared with the criteria as stated in the Maryland Water Quality Standards. Both criteria were developed using the same values for temperature and pH. The salinity values recorded at DEQ Monitoring Station 1AUMC004.43 varied greatly; therefore, it was staff's best professional judgement to assume a salinity value of 10 parts per thousand for the receiving stream in order to calculate the criteria:

TABLE 4
SALTWATER AMMONIA CRITERIA

	Virginia	Maryland
Acute	3.78 mg/L	4.6 mg/L
Chronic	0.57 mg/L	0.69 mg/L

Since the criteria are more protective under the Virginia standards, these values will be utilized to calculate the ammonia limitations.

Metals Criteria:

The Water Quality Criteria for some metals are dependent on the receiving stream's hardness (expressed as mg/L calcium carbonate). The aforementioned monitoring station, 1AUMC004.43, recorded values ranging from 56 mg/L to 1670 mg/L $CaCO_3$, thus resulting in an average value of 864 mg/L as $CaCO_3$. Due to the variability of data, it is staff's best professional judgement to utilize a default value of 50 mg/L $CaCO_3$ to ensure that the receiving stream is protected at all times.

The hardness-dependent metals criteria shown in **Attachment 6** are based on this value.

Bacteria Criteria:

The Virginia Water Quality Standards (9VAC25-260-170.A.) states the following bacteria criteria shall apply to protect primary contact recreational uses in surface waters:

Enterococci bacteria per 100 mL of water shall not exceed the following:

	Monthly Geometric Mean[1]
Saltwater and Transition Zone[2] enterococci	35

[1]For four or more samples taken during any calendar month
[2]See 9VAC25-260-140 C for freshwater and transition zone delineation

The Maryland Water Quality Criteria Specific to Designated Uses (Code of Maryland Regulations 26.08.02.03-3.A) states that sewage discharges shall be disinfected to achieve the following criteria:

Enterococci bacteria per 100 mL of water shall not exceed the following:

	Monthly Geometric Mean
Marine water enterococci	35

c. Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9VAC25-260-360, 370 and 380) designates the river basins, sections, classes and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, Upper Machodoc, is located within Section 2 of the Potomac River Basin. This section has been designated with a special standard of "a".

The receiving stream has been designated with a special standard of "a". According to 9VAC25-260-310.a, Special Standard "a" applies to all open ocean or estuarine waters capable of propagating shellfish or in specific areas where public or leased private shellfish beds are present, including those waters on which condemnation or restriction classifications are established by the State Department of Health. The fecal coliform bacteria standard is as follows: the geometric mean fecal coliform value for a sampling station shall not exceed an MPN (Most probable number) of 14 per 100 milliliters of sample and the 90th percentile shall not exceed 43 for a 5-tube, 3-dilution or 49 for a 3-tube, 3-dilution test. The shellfish are not to be so contaminated by radionuclides, pesticides, herbicides or fecal material that the consumption of shellfish might be hazardous. This same standard is also contained in 9 VAC 25-260-160 Fecal Coliform Bacteria; Shellfish Waters. This standard is used for the interpretation of instream monitoring data and not for setting fecal coliform effluent limitations.

On 15 January 2003, new bacteria standards in the Water Quality Standards (9VAC25-260-170.A.) became effective as did a revised disinfection policy, 9VAC25-260-170.B. These standards replaced the fecal coliform standard; thus, *E. coli* and enterococci bacteria became the criterion. It has been demonstrated that the limit for enterococci of 35 N/100 mL, which is applicable for Saltwater and Transition Zones, is protective and will be carried forward with this reissuance.

d. Threatened or Endangered Species

The Virginia DGIF Fish and Wildlife Information System Database was researched on 20 July 2010 for records to determine if there are threatened or endangered species in the vicinity of the discharge. The following threatened or endangered species were identified within a 2 mile radius of the discharge: Upland Sandpiper (song bird); Loggerhead Shrike (song bird); Bald Eagle; and Migrant Loggerhead Shrike (song bird). The limits proposed in this draft permit are protective of the Virginia Water Quality Standards and therefore, protect the threatened and endangered species found near the discharge.

The stream that the facility discharges to is potentially within a reach identified as having an Anadromous Fish Use. It is staff's best professional judgment that the proposed limits are protective of this use.

16. Antidegradation (9VAC25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving stream has been classified as Tier 1 based on the noted impairments. The proposed limitations have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria that are applicable to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

17. Effluent Screening, Wasteload Allocation and Effluent Limitation Development:

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points are equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

For discharges into tidal water bodies, wasteload allocations should be based on site specific information concerning waste dispersion. A site specific dilution ratio of 10:1 for acute aquatic life criteria and a dilution ratio of 20:1 for chronic aquatic life criteria and human health criteria are used to prevent lethality in the allocated impact zone as determined by the stream model for the discharge (**Attachment 1**). Even though the modeled flow is greater than the design flow of this facility, it is staff's best professional judgement that this results in limits that are more protective.

Utilizing the dilution ratios, Wasteload Allocations (WLAs) are calculated. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are the calculated on the most limiting WLA, the required sampling frequency and statistical characteristics of the effluent data.

a. Effluent Screening

Effluent data were reviewed and there have been no exceedances of the established limitations during the last permit term.

b. Effluent Limitations, Outfall 001 – Toxic Pollutants

9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation, 9VAC25-31-230.D., requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

1) Ammonia as N:

DEQ-NRO and the Virginia Department of Health (VDH) approved plans and specifications for upgrades at this facility in 1995. The engineering design basis stated that these upgrades would allow the facility to achieve 5 mg/L for Ammonia as N. The Certificate to Operate was issued in 2010 after final completion of the upgrades (**Attachment 7**).

Therefore, it is staff's best professional judgement that the technology upgrades are applicable and protective of the receiving stream. This limit is also protective of the Maryland Water Quality Standards.

2) Metals/Organics:

It is staff's best professional judgement that no evaluation is warranted for this reissuance; however, if the industrial survey indicates possible sources, a reevaluation may be initiated by staff.

c. Effluent Limitations and Monitoring, Outfall 001 – Conventional and Non-Conventional Pollutants

No changes to Biochemical Oxygen Demand-5 day (BOD_5) and Total Suspended Solids (TSS) are proposed.

BOD_5 limitations are based on the stream modeling conducted in August 1994 (**Attachment 1**).

It is staff's practice to equate the Total Suspended Solids limits with the BOD_5 limits since the two pollutants are closely related in terms of treatment of domestic sewage.

Dissolved Oxygen and pH limitations are set at the Maryland Water Quality Standards.

Enterococci limitations are in accordance with the Virginia Water Quality Standards 9VAC25-260-170 and are equivalent to the Maryland Water Quality Standards COMAR 26.08.02 et seq.

d. Effluent Annual Average Limitations and Monitoring, Outfall 001 – Nutrients

VPDES Regulation 9VAC25-31-220(D) requires effluent limitations that are protective of both the numerical and narrative water quality standards for state waters, including the Chesapeake Bay.

As discussed in Section 15, significant portions of the Chesapeake Bay and its tributaries are listed as impaired with nutrient enrichment cited as one of the primary causes. Virginia has committed to protecting and restoring the Bay and its tributaries.

There are three regulations that necessitate the inclusion of nutrient limitations:

- 9VAC25-40 – *Regulation for Nutrient Enriched Waters and Dischargers within the Chesapeake Bay Watershed* requires new or expanding discharges with design flows of $\geq$ 0.04 MGD to treat for TN and TP to either BNR levels (TN = 8 mg/L; TP = 1.0 mg/L) or SOA levels (TN = 3.0 mg/L and TP = 0.3 mg/L).

- 9VAC25-720 – *Water Quality Management Plan Regulation* sets forth TN and TP maximum wasteload allocations for facilities designated as significant discharges, i.e., those with design flows of $\geq$ 0.5 MGD above the fall line and $\geq$ 0.1 MGD below the fall line. This regulation limits the total nitrogen and total phosphorus mass loadings from these discharges.

- 9VAC25-820 – *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia* became effective 1 January 2007. This regulation specifies and controls the nitrogen and phosphorus loadings from facilities and specifies facilities that must register under the general permit. Nutrient loadings for those facilities registered under the general permit as well as compliance schedules and other permit requirements, shall be authorized, monitored, limited, and otherwise regulated under the general permit and not this individual permit. This facility has coverage under this General Permit; the permit number is VAN010041.

Monitoring for Nitrates + Nitrites is included in this permit. The monitoring is needed to protect the Water Quality Standards of the Chesapeake Bay. Monitoring frequencies reflect those set forth in 9VAC25-820.

Limitations for Total Nitrogen and Total Phosphorus are based on the technology installed and the engineering basis of design (**Attachment 7**).

Annual average effluent limitations, as well as monthly and year to date calculations, for Total Nitrogen and Total Phosphorus are included in this individual permit.

e. Effluent Limitations and Monitoring Summary

The effluent limitations are presented in the following table. Limits were established for BOD_5, Total Suspended Solids, Ammonia, pH, Dissolved Oxygen, Total Nitrogen, Total Phosphorus and enterococci.

The limit for Total Suspended Solids is based on Best Professional Judgement.

The mass loading (kg/d) for monthly and weekly averages were calculated by multiplying the concentration values (mg/L), with the flow values (in MGD) and then a conversion factor of 3.785.

Sample Frequencies are in accordance with the recommendations in the current VPDES Permit Manual.

The permittee has requested that the Sample Type be a 24H-C in lieu of the recommended 8H-C as stated in the current VPDES Permit Manual.

The VPDES Permit Regulation at 9VAC25-31-30 and 40 CFR Part 133 require that the facility achieve at least 85% removal for BOD/CBOD and TSS (or 65% for equivalent to secondary). The limits in this permit are water-quality-based effluent limits and result in greater than 85% removal.

18. Antibacksliding:

All limits in this permit are at least as stringent as those previously established. Backsliding does not apply to this reissuance.

19. Effluent Limitations/Monitoring Requirements:

Design flow is 0.72 MGD.

Effective Dates: During the period beginning with the permit's effective date and lasting until the permit expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	N/A	NL	NA	NA	NL	Continuous	TIRE
pH	3	NA	NA	6.5 S.U.	8.5 S.U.	1/D	Grab
Biochemical Oxygen Demand (BOD_5)	3,4,5	30 mg/L 82 kg/day	45 mg/L 120 kg/day	NA	NA	3D/W	24H-C
Total Suspended Solids (TSS)	2	30 mg/L 82 kg/day	45 mg/L 120 kg/day	NA	NA	3D/W	24H-C
Dissolved Oxygen (DO)	3	NA	NA	5.5 mg/L	NA	1/D	Grab
Ammonia, as N	2,7	5.0 mg/L	5.0 mg/L	NA	NA	3D/W	24H-C
Enterococci (Geometric Mean)	3,4	35 n/100 mL	NA	NA	NA	3D/W	Grab*
Nitrate+Nitrite, as N	4,6	NL mg/L	NA	NA	NA	1/2W	24H-C
Total Nitrogen [a.]	2,7	NL mg/L	NA	NA	NA	1/2W	Calculated
Total Nitrogen – Year to Date [b.]	4,6	NL mg/L	NA	NA	NA	1/M	Calculated
Total Nitrogen – Calendar Year [b.]	4,6	7.0 mg/L	NA	NA	NA	1/Y	Calculated
Total Phosphorus	2,7	NL mg/L	NA	NA	NA	1/2W	24H-C
Total Phosphorus – Year to Date [b.]	4,6	NL mg/L	NA	NA	NA	1/M	Calculated
Total Phosphorus – Calendar Year [b.]	4,6	2.0 mg/L	NA	NA	N/A	1/Y	Calculated
Chronic Toxicity – *M. bahia* (TU_c)		NA	NA	NA	NL	1/Y	24H-C
Chronic Toxicity – *C. variegates* (TU_c)		NA	NA	NA	NL	1/Y	24H-C

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgement
3. MD Water Quality Standards
4. VA Water Quality Standards
5. Stream Model – **Attachment 1**
6. 9VAC25-40 (Nutrient Regulation)
7. Basis of design/CTO – **Attachment 7**

MGD = Million gallons per day.
NA = Not applicable.
NL = No limit; monitor and report.
S.U. = Standard units.
TIRE = Totalizing, indicating and recording equipment.

1/D = Once every day.
3D/W = Three days a week.
1/2W = Once every two weeks, > 7 days apart.
1/M = Once every month.
1/Y = Once every calendar year.

24H-C = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the monitored 24-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of twenty-four (24) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum twenty-four (24) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by 10% or more during the monitored discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

* Shall collect samples between 10 A.M. and 4 P.M.

a. Total Nitrogen = Sum of TKN plus Nitrate+Nitrite

b. See Section 20.a. for the calculation of the Nutrient Calculations.

20. Other Permit Requirements:

a. Part I.B. of the permit contains quantification levels and compliance reporting instructions

9VAC25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

The calculations for the Nitrogen and Phosphorus parameters shall be in accordance with the calculations set forth in 9VAC25-820 *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia.* §62.1-44.19:13 of the Code of Virginia define how annual nutrient loads are to be calculated; this is carried forward in 9VAC25-820-70. As annual concentrations (as opposed to loads) are limited in the individual permit, these reporting calculations are intended to reconcile the reporting calculations between the permit programs, as the permittee is collecting a single set of samples for the purpose of ascertaining compliance with two permits.

b. Permit Section Part I.C., details the requirements for Toxics Management Program

The VPDES Permit Regulation at 9VAC25-31-210 requires monitoring and 9VAC25-31-220.I, requires limitations in the permit to provide for and assure compliance with all applicable requirements of the State Water Control Law and the Clean Water Act. A TMP is imposed for municipal facilities with a design rate > 1.0 MGD, with an approved pretreatment program or required to develop a pretreatment program or those determined by the Board based on effluent variability, compliance history, IWC and receiving stream characteristics.

The NSF Dahlgren STP began monitoring in 1995 and results from earlier tests indicated a variable effluent which posed toxicity to the test species. This facility has been monitoring on an annual basis and will continue with this reissuance. See **Attachment 8** for the most recent staff review.

c. Permit Section Part I.D., details the Requirements for the Regulation of Users

The VPDES Permit Regulation at 9VAC25-31-280.B.9 requires that the Board provide an explanation on the regulation of users (i.e., industrial, indirect dischargers) to treatment works not owned by a state or a municipality.

The Naval Support Facility Dahlgren STP serves a Research and Development complex; thus, creating a potential for pollutants to pass through or interfere with the operation of the treatment plant. It is staff's best professional judgement that this facility conducts an industrial survey within one year of the effective date of this permit. The survey shall be submitted to DEQ-NRO on or before 15 March 2012.

DEQ-NRO staff will review the survey to determine if the facility may need to regulate any users.

21. Other Special Conditions:

a. 95% Capacity Reopener. The VPDES Permit Regulation at 9VAC25-31-200.B.4. requires all POTWs and PVOTWs develop and submit a plan of action to DEQ when the monthly average influent flow to their sewage treatment plant reaches 95% or more of the design capacity authorized in the permit for each month of any three consecutive month period.

b. Indirect Dischargers. Required by VPDES Permit Regulation, 9VAC25-31-200 B.1. and B.2. for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.

c. O&M Manual Requirement. Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790; VPDES Permit Regulation, 9VAC25-31-190.E. On or before 15 June 2011, the permittee shall submit for approval an Operations and Maintenance (O&M) Manual or a statement confirming the accuracy and completeness of the current O&M Manual to the Department of Environmental Quality, Northern Regional Office (DEQ-NRO). Future changes to the facility must be addressed by the submittal of a revised O&M Manual within 90 days of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.

d. CTC, CTO Requirement. The Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790 requires that all treatment works treating wastewater obtain a Certificate to Construct prior to commencing construction and to obtain a Certificate to Operate prior to commencing operation of the treatment works.

e. Licensed Operator Requirement. The Code of Virginia at §54.1-2300 et seq. and the VPDES Permit Regulation at 9VAC25-31-200 C, and Rules and Regulations for Waterworks and Wastewater Works Operators (18VAC160-20-10 et seq.) requires licensure of operators. This facility requires a Class II operator.

f. Reliability Class. The Sewage Collection and Treatment Regulations at 9VAC25-790 require sewage treatment works to achieve a certain level of reliability in order to protect water quality and public health consequences in the event of component or system failure. Reliability means a measure of the ability of the treatment works to perform its designated function without failure or interruption of service. The facility is required to meet Class I reliability.

g. Sludge Reopener. The VPDES Permit Regulation at 9VAC25-31-220.C. requires all permits issued to treatment works treating domestic sewage (including sludge-only facilities) include a reopener clause allowing incorporation of any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the CWA. The facility includes a sewage treatment works.

h. Sludge Use and Disposal. The VPDES Permit Regulation at 9VAC25-31-100.P; 220.B.2., and 420 through 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on their sludge use and disposal practices and to meet specified standards for sludge use and disposal. The facility includes a treatment works treating domestic sewage.

i. E3/E4. 9VAC25-40-70.B. authorizes DEQ to approve an alternate compliance method to the technology-based effluent concentration limitations as required by subsection A of this section. Such alternate compliance method shall be incorporated into the permit of an Exemplary Environmental Enterprise (E3) facility or an Extraordinary Environmental Enterprise (E4) facility to allow the suspension of applicable technology-based effluent concentration limitations during the period the E3 or E4 facility has a fully implemented environmental management system that includes operation of installed nutrient removal technologies at the treatment efficiency levels for which they were designed.

j. Nutrient Reopener. 9VAC25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade. 9VAC25-31-390 A authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.

k. TMDL Reopener. This special condition allows the permit to be reopened if necessary to bring it into compliance with any applicable TMDL that may be developed and approved for the receiving stream.

l. PCB Monitoring. This special condition requires the permittee to conduct PCB dry weather and wet weather monitoring using ultra-low level PCB analysis to support the implementation of the PCB TMDL for the fish consumption use impairment in the Potomac River.

22. Permit Section Part II. Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

23. Changes to the Permit from the Previously Issued Permit:

a. Special Conditions:

- The following conditions were included with this reissuance: Sludge Reopener, Sludge Use and Disposal, E3/E4, Nutrient Reopener and PCB Monitoring.
- The Nutrient Enriched Waters Reopener was removed per agency guidance.
- The Requirements for the Regulation of Users was included with this reissuance.
- The Schedule of Compliance was removed since the permittee completed all items during the last permit term.

b. Monitoring and Effluent Limitations:

- The Chlorine Produced Oxidant limitations were removed since there is no chlorine inventory and the facility relies solely on the UV disinfection unit.
- The Dissolved Oxygen and pH limitations were changed to reflect current Maryland Water Quality Standards.
- Removed Orthophosphate monitoring per current agency guidance.
- Nutrient loading reporting was removed per agency guidance.
- The ammonia limitation was reduced based on the engineering basis of design and CTO.
- Concentration limitations for Total Nitrogen and Total Phosphorus were added with this reissuance based on the engineering basis of design and CTO.

24. Variances/Alternate Limits or Conditions: Not Applicable

25. Public Notice Information:

First Public Notice Date: 10 February 2011 Second Public Notice Date: 17 February 2011

Public Notice Information is required by 9VAC25-31-280.B. All pertinent information is on file and may be inspected and copied by contacting the: DEQ Northern Regional Office; 13901 Crown Court; Woodbridge, VA 22193; Telephone No. (703) 583-3873; Douglas.Frasier@deq.virginia.gov. See **Attachment 9** for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may request an electronic copy of the draft permit and fact sheet or review the draft permit and application at the DEQ Northern Regional Office by appointment.

26. 303 (d) Listed Stream Segments and Total Max. Daily Loads (TMDL):
The segment of Upper Machodoc Creek is listed as impaired for not meeting the fish consumption and aquatic life due to Polychlorinated Biphenyls (PCBs) and low Dissolved Oxygen, respectively. The facility will be required to conduct PCB monitoring during this permit term. The TMDL for aquatic life is due in 2010.

27. Additional Comments:

Previous Board Action(s):	None.
Staff Comments:	None.
Public Comment:	No comments were received during the public notice.
EPA Checklist:	The checklist can be found in **Attachment 10**.

Fact Sheet Attachments

Table of Contents

Naval Support Facility Dahlgren Sewage Treatment Plant
VA0021067
2010 Reissuance

Attachment 1	Flow Frequency Determination/Stream Model
Attachment 2	Facility Schematic/Diagram
Attachment 3	Topographic Map
Attachment 4	Site Visit Memo
Attachment 5	Dissolved Oxygen Criteria for Class II Waters
Attachment 6	Water Quality Criteria
Attachment 7	Upgrade Design Basis/Certificate to Operate
Attachment 8	Toxics Management Program Review Memo
Attachment 9	Public Notice
Attachment 10	EPA Checklist

MALCOLM PIRNIE

MALCOLM PIRNIE, INC.
ENVIRONMENTAL ENGINEERS, SCIENTISTS & PLANNERS

August 19, 1994

Ms. Ann Swope
Dahlgren Division
Naval Surface Warfare Center
Dahlgren, Virginia 22448-5000

Re: NPDES Permit; Water Quality Modeling; Addendum to the September 1992 Report.

Dear Ms. Swope:

We have reviewed our files on the surface water quality modeling conducted to support the Dahlgren NSWC NPDES application. The following tasks have been conducted in response to your request to revise modeling results to simulate a 750,000 gallon per day (gpd) discharge:

- Re-calculated loading rates based on 750,000 gpd discharge
- Re-ran the Marina model using the new loading rates
- Re-evaluated Fecal Coliform and toxics distribution
- Re-evaluated Dissolved Oxygen Sag (DO Sag)
- Revised figures 3-1, 3-2, 3-3, and 3-4 in the September 1992 report

Loading Rates

The loading rates for fecal coliform (average and maximum reported values), a simulated conservative substance at 100μg/L, cyanide at a concentration of 20 μg/L, and biological oxygen demand (BOD) were recalculated using the new discharge rate of 750,000 gpd. The new loading rates are presented below:

Parameter	Previous Loading Rate	New Loading Rate
F.Coli Avg.- 59 MPN/100 ml	1.55 x 10^4 MPN/sec	1.94 x 10^4 MPN/sec
F.Coli Max - 310 MPN/100 ml	8.15 x 10^4 MPN/sec	1.02 x 10^5 MPN/sec
Conservative Substance at 100 μg/L	2.63 x 10^3 μg/sec	3.29 x 10^3 μg/sec
Cyanide at 20 μg/L	5.26 x 10 5 ηg/sec	6.57 x 10 5 ηg/sec
Biological Oxygen Demand	234 lb/day	291 lb/day

Marina Model

The new loading rates presented in the above table were used as input to the Marina model used previously. All other model variables (Average channel depth, dispersion, river velocity, channel width, and the parameter respective decay constants) remained unchanged. The resulting model output diagrams are enclosed.

Re-evaluation of Water Quality Modeling Results

Fecal Coliform

Results of the Fecal Coliform model run indicated only slight increases in the distance of the outfall plume. Figure 3-1 (revised) shows the new contour line for 4 MPN/100 ml, based on the average fecal coliform concentration of 59 MPN/100 ml. As with the previous model run from the September 1992 document, at a distance of 1 meter from the outfall the fecal coliform concentration is below the Virginia Department of Health limit of 14 MPN/100 ml. Figure 3-2 (revised) shows the new predicted position of the 14 MPN/100 ml limit for the reported maximum fecal coliform outfall concentration of 310 MPN/100 ml. This distribution indicates that at a distance of 25 meters perpendicular to the STP outfall, the concentration of fecal coliform drops below the VDH limit and that approximately 25 meters upstream and 75 meters downstream of the outfall the fecal coliform concentration falls below the VDH limit. In both cases, the predicted fecal coliform concentrations above the VDH limit would not increase the existing closed shellfish areas; therefore, its is not expected that any existing harvesting areas would be impacted.

Toxics

Figure 3-3 (revised) shows the distribution contours representing percent dilution of a conservative substance. At approximately 10 meters perpendicular to the STP outfall, the concentration is reduced by 90 percent. Upstream 90 percent reduction occurs at approximately 9 meters while downstream 90 percent reduction occurs at approximately 16 meters.

Cyanide distribution contour is shown in Figure 3-4 (revised). The contour line represents the 1.0 μg/L marine acute criterion for surface water set by the EPA. The graphic shows that the allocated impact zone based on this limit extends perpendicular from the outfall a distance of approximately 25 meters. The upstream extent is approximately 27 meters, while the downstream extent of the 1.0 μg/L contour is approximately 100 meters.

BOD

As in the previous study the new BOD loading rate remained relatively small. The calculated DO deficit based on the new BOD loading rate is still negligible. The DO deficit was calculated to be 9.82×10^{-4} mg/L.

MALCOLM PIRNIE

If you have any questions or should need further assistance please do not hesitate to call me.

Very truly yours,

MALCOLM PIRNIE, INC.

Bruce W. Schwenneker, Ph.D.
Senior Associate

djk
1613-201-100

Enclosures

DKL819.BWS

RESULTS FOR USER DESIGNATED EXAMPLE fc310.dat

Fecal Coliform Distribution @ a concentration of 310 MPN/100ml

INPUT IN MKS UNITS:

M	H	DX	DY	U	B	KD
-	-	--	--	-	-	--
0.102E+06	0.200E+01	0.210E+00	0.700E-01	0.400E-02	0.100E+04	0.100E-04

*** CONCENTRATION IN ORGANISMS PER 100 ML ***

EVALUATION IS FROM -5 TO 5

VALUES OF Y/B (COLUMNS) & X/B (ROWS):

	0.000	0.005	0.010	0.015	0.020	0.025	0.030	0.035	0.040	0.045	0.050	0.055	0.060	0.065	0.070	0.075	0.080	0.085	0.090	0.0
			10m								50m									
-0.100	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	
-0.095	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	
-0.090	2	2	2	2	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	
-0.085	2	2	2	2	2	2	1	1	1	1	1	1	1	1	0	0	0	0	0	
-0.080	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	0	0	0	0	
-0.075	3	3	3	3	2	2	2	2	2	1	1	1	1	1	1	1	0	0	0	
-0.070	3	3	3	3	3	3	2	2	2	2	1	1	1	1	1	1	0	0	0	
-0.065	4	4	4	3	3	3	3	2	2	2	2	1	1	1	1	1	1	0	0	
-0.060	4	4	4	4	4	3	3	3	2	2	2	2	1	1	1	1	1	1	0	
-0.055	5	5	5	5	4	4	3	3	3	2	2	2	1	1	1	1	1	1	0	
-0.050	6	6	6	5	5	4	4	3	3	3	2	2	2	1	1	1	1	1	1	
-0.045	7	7	7	6	6	5	4	4	3	3	2	2	2	2	1	1	1	1	1	
-0.040	8	8	8	7	6	6	5	4	4	3	3	2	2	2	1	1	1	1	1	
-0.035	10	10	9	8	7	6	5	5	4	4	3	3	2	2	2	1	1	1	1	
-0.030	12	11	11	9	8	7	6	5	4	4	3	3	2	2	2	1	1	1	1	
-0.025	14	14	12	11	9	8	7	6	5	4	4	3	3	2	2	2	1	1	1	
-0.020	17	16	14	12	10	9	7	6	5	5	4	3	3	2	2	2	1	1	1	
-0.015	21	20	17	14	11	10	8	7	6	5	4	4	3	3	2	2	2	1	1	
-0.010	27	24	19	15	12	10	9	7	6	5	4	4	3	3	2	2	2	1	1	
-0.005	37	28	21	17	13	11	9	8	7	6	5	4	3	3	3	2	2	2	1	
0.000	9999	32	23	18	14	12	10	8	7	6	5	4	4	3	3	2	2	2	1	
0.005	41	31	23	18	15	12	10	9	7	6	5	4	4	3	3	2	2	2	1	
0.010	33	29	23	19	15	13	11	9	8	6	5	5	4	3	3	3	2	2	2	
0.015	28	26	22	18	15	13	11	9	8	7	6	5	4	4	3	3	2	2	2	
0.020	25	24	21	18	15	13	11	9	8	7	6	5	4	4	3	3	2	2	2	
0.025	23	22	20	18	15	13	11	10	8	7	6	5	5	4	3	3	2	2	2	
0.030	21	21	19	17	15	13	11	10	8	7	6	5	5	4	3	3	3	2	2	
0.035	20	19	18	16	15	13	11	10	8	7	6	6	5	4	4	3	3	2	2	
0.040	19	18	17	16	14	13	11	10	8	7	6	6	5	4	4	3	3	2	2	
0.045	18	17	16	15	14	12	11	10	9	7	7	6	5	4	4	3	3	2	2	
0.050	17	16	16	15	13	12	11	10	9	8	7	6	5	4	4	3	3	3	2	
0.055	16	16	15	14	13	12	11	10	8	8	7	6	5	5	4	3	3	3	2	
0.060	15	15	14	14	13	12	10	9	8	8	7	6	5	5	4	4	3	3	2	
0.065	14	14	14	13	12	11	10	9	8	7	7	6	5	5	4	4	3	3	2	
0.070	14	14	13	13	12	11	10	9	8	7	7	6	5	5	4	4	3	3	2	
0.075	13	13	13	12	11	11	10	9	8	7	7	6	5	5	4	4	3	3	2	
0.080	13	13	12	12	11	10	10	9	8	7	7	6	5	5	4	4	3	3	3	
0.085	12	12	12	11	11	10	9	9	8	7	7	6	5	5	4	4	3	3	3	
0.090	12	12	11	11	11	10	9	9	8	7	7	6	5	5	4	4	3	3	3	
0.095	11	11	11	11	10	10	9	8	8	7	6	6	5	5	4	4	3	3	3	
0.100	11	11	11	10	10	9	9	8	8	7	6	6	5	5	4	4	3	3	3	

Conservative Substance distribution @ 100 µg/L.
Note: output values are interpreted as percent dilution – a value of 23 = 2.3% of original concentration
23/10 = 2.3%

RESULTS FOR USER DESIGNATED EXAMPLE consvtv.dat

INPUT IN MKS UNITS:

M	H	DX	DY	U	B	KD
-	-	--	--	-	-	--
0.329E+06	0.200E+01	0.210E+00	0.700E-01	0.400E-02	0.100E+04	0.100E-19

*** CONCENTRATION IN ORGANISMS PER 100 ML ***

EVALUATION IS FROM -5 TO 5

VALUES OF Y/B (COLUMNS) & X/B (ROWS):

	0.000	0.005	0.010	0.015	0.020	0.025	0.030	0.035	0.040	0.045	0.050	0.055	0.060	0.065	0.070	0.075	0.080	0.085	0.090	0.09
						25m							60m							
-0.050	25	25	24	23	21	19	18	16	14	13	12	10	9	8	7	7	6	5	5	
-0.047	27	27	26	24	22	20	19	17	15	13	12	11	10	9	8	7	6	6	5	
-0.045	29	29	28	26	24	22	19	18	16	14	13	11	10	9	8	7	6	6	5	
-0.043	31	31	29	27	25	23	20	18	16	15	13	12	10	9	8	7	7	6	5	
-0.040 40m	34	33	31	29	27	24	22	19	17	15	14	12	11	10	9	8	7	6	6	
-0.038	36	36	34	31	28	25	23	20	18	16	14	13	11	10	9	8	7	6	6	
-0.035	39	38	36	33	30	27	24	21	19	17	15	13	12	10	9	8	7	7	6	
-0.033	42	41	39	35	31	28	25	22	20	17	15	14	12	11	10	9	8	7	6	
-0.030	45	44	41	37	33	29	26	23	20	18	16	14	13	11	10	9	8	7	6	
-0.028	49	48	44	40	35	31	27	24	21	19	17	15	13	12	10	9	8	7	7	
-0.025	54	52	47	42	37	32	28	25	22	19	17	15	13	12	11	9	8	8	7	
-0.023	58	56	51	45	39	34	30	26	23	20	18	16	14	12	11	10	9	8	7	
-0.020	64	61	54	47	41	35	31	27	24	21	18	16	14	13	11	10	9	8	7	
-0.018	70	66	58	50	43	37	32	28	24	21	19	17	15	13	12	10	9	8	7	
-0.015	77	72	62	53	45	38	33	29	25	22	20	17	15	14	12	11	10	9	8	
-0.013	86	79	66	55	47	40	34	30	26	23	20	18	16	14	12	11	10	9	8	
-0.010	97	86	70	58	49	41	36	31	27	24	21	18	16	14	13	11	10	9	8	
-0.008	110	94	74	60	50	43	37	32	28	24	21	19	17	15	13	12	10	9	8	
-0.005	130	101	78	63	52	44	38	33	28	25	22	19	17	15	13	12	11	9	8	
-0.003	162	108	81	65	54	45	39	34	29	26	22	20	18	16	14	12	11	10	9	
0.000	9999	113	83	66	55	46	40	34	30	26	23	20	18	16	14	13	11	10	9	
0.002	170	114	85	68	56	48	41	35	31	27	24	21	18	16	14	13	11	10	9	
0.005	143	112	86	69	57	49	42	36	31	27	24	21	19	17	15	13	12	10	9	
0.007	128	108	86	70	58	49	42	37	32	28	25	22	19	17	15	14	12	11	10	
0.010 10m	117	104	85	70	59	50	43	37	33	29	25	22	20	17	16	14	12	11	10	
0.012	109	100	84	70	59	51	44	38	33	29	26	23	20	18	16	14	13	11	10	
0.015	103	96	83	70	60	51	44	39	34	30	26	23	20	18	16	14	13	11	10	
0.017	98	92	81	70	60	52	45	39	34	30	27	24	21	19	17	15	13	12	10	
0.020	94	89	80	69	60	52	45	40	35	31	27	24	21	19	17	15	13	12	11	1
0.022	90	86	78	69	60	52	46	40	35	31	27	24	22	19	17	15	14	12	11	1
0.025	86	84	76	68	60	52	46	40	36	31	28	25	22	20	17	16	14	12	11	1
0.027	84	81	75	67	60	52	46	41	36	32	28	25	22	20	18	16	14	13	11	1
0.030 30m	81	79	73	66	59	52	46	41	36	32	29	25	23	20	18	16	14	13	12	1
0.032	79	77	72	66	59	52	47	41	37	33	29	26	23	21	18	16	15	13	12	1
0.035	76	75	71	65	58	52	47	41	37	33	29	26	23	21	19	17	15	13	12	1
0.037	74	73	69	64	58	52	47	42	37	33	30	26	24	21	19	17	15	14	12	1
0.040	73	71	68	63	58	52	47	42	37	33	30	27	24	21	19	17	15	14	12	1
0.042	71	70	67	62	57	52	47	42	38	34	30	27	24	22	19	17	16	14	13	1
0.045	69	68	66	61	57	52	47	42	38	34	30	27	24	22	20	18	16	14	13	1
0.047	68	67	64	61	56	51	47	42	38	34	31	28	25	22	20	18	16	15	13	1
0.050	67	66	63	60	55	51	46	42	38	34	31	28	25	22	20	18	16	15	13	1

RESULTS FOR USER DESIGNATED EXAMPLE a:\rerun\cn.

INPUT IN MKS UNITS:

Cyanide distribution at a Concentration of 20 µg/L

M	H	DX	DY	U	B	KD
0.657E+06	0.200E+01	0.210E+00	0.700E-01	0.400E-02	0.100E+04	0.100E-08

*** CONCENTRATION IN ORGANISMS PER 100 ML ***

EVALUATION IS FROM -5 TO 5

VALUES OF Y/B (COLUMNS) & X/B (ROWS):

	0.000	0.005	0.010 (10m)	0.015	0.020	0.025 (25m)	0.030	0.035	0.040	0.045	0.050 (50m)	0.055	0.060	0.065	0.070	0.075 (75m)	0.080	0.085	0.090	0.09
-0.100	15	14	14	14	13	13	12	11	11	10	9	9	8	7	7	6	6	5	5	
-0.093	17	17	17	17	16	15	14	13	13	12	11	10	9	8	8	7	6	6	5	
-0.085	21	21	20	20	19	18	17	16	15	14	12	11	10	10	9	8	7	7	6	
-0.078	25	25	24	24	23	21	20	19	17	16	14	13	12	11	10	9	8	7	7	
-0.070	30	30	29	28	27	25	23	22	20	18	17	15	14	12	11	10	9	8	8	
-0.062	37	36	35	34	32	30	27	25	23	21	19	17	16	14	13	12	10	9	8	
-0.055	45	44	43	41	38	35	32	29	27	24	22	20	18	16	14	13	12	10	9	
-0.047	55	54	52	49	45	41	37	34	31	27	25	22	20	18	16	14	13	12	10	
-0.040	68	67	63	59	54	48	43	39	35	31	28	25	22	20	18	16	14	13	12	1
-0.032	85	83	77	71	63	56	50	44	39	35	31	28	25	22	20	18	16	14	13	1
-0.025	107	104	95	84	74	65	57	50	44	39	35	31	27	24	22	19	17	16	14	1
-0.017	140	133	116	100	86	74	64	56	49	43	38	34	30	27	24	21	19	17	15	1
-0.010	194	172	141	116	97	83	71	62	54	47	42	37	33	29	26	23	21	18	17	1
-0.002	324	217	162	130	108	91	78	67	59	52	45	40	35	31	28	25	22	20	18	1
0.005	286	223	171	138	115	97	84	72	63	55	49	43	38	34	30	27	24	21	19	1
0.013	219	200	168	141	119	102	88	76	67	59	52	46	41	36	32	29	26	23	21	1
0.020	187	179	160	139	120	104	91	80	70	62	54	48	43	38	34	30	27	24	22	2
0.028	167	162	150	135	119	105	93	82	72	64	57	51	45	40	36	32	29	26	23	2
0.035	153	150	141	130	117	105	94	83	74	66	59	53	47	42	38	34	30	27	25	2
0.043	142	140	134	125	114	104	94	84	76	68	61	54	49	44	39	35	32	29	26	2
0.050	133	132	127	120	111	102	93	84	76	69	62	56	50	45	41	37	33	30	27	2
0.058	126	125	121	115	108	100	92	84	77	70	63	57	52	47	42	38	34	31	28	2
0.065	120	119	116	111	105	98	91	84	77	70	64	58	53	48	43	39	36	32	29	2
0.073	115	114	111	107	102	96	90	83	77	71	65	59	54	49	45	40	37	33	30	2
0.080	110	109	107	104	99	94	88	82	76	71	65	60	55	50	46	41	38	34	31	2
0.088	106	106	104	101	97	92	87	81	76	70	65	60	55	51	46	42	39	35	32	2
0.095	103	102	100	98	94	90	85	80	75	70	65	60	56	51	47	43	40	36	33	3
0.103	99	99	97	95	92	88	84	79	75	70	65	60	56	52	48	44	40	37	34	3
0.110	96	96	94	92	90	86	82	78	74	69	65	61	56	52	48	44	41	38	35	3
0.118	94	93	92	90	88	84	81	77	73	69	65	60	56	52	49	45	42	38	35	3
0.125	91	91	90	88	86	83	80	76	72	68	64	60	56	53	49	45	42	39	36	3
0.133	89	88	87	86	84	81	78	75	71	68	64	60	56	53	49	46	43	39	36	3
0.140	87	86	85	84	82	80	77	74	71	67	64	60	56	53	49	46	43	40	37	3
0.148	85	84	84	82	80	78	76	73	70	66	63	60	56	53	50	46	43	40	37	3
0.155	83	82	82	81	79	77	74	72	69	66	63	59	56	53	50	47	44	41	38	3
0.163	81	81	80	79	77	76	73	71	68	65	62	59	56	53	50	47	44	41	38	3
0.170	79	79	79	77	76	74	72	70	67	65	62	59	56	53	50	47	44	41	39	3
0.178	78	78	77	76	75	73	71	69	66	64	61	58	56	53	50	47	44	41	39	3
0.185	76	76	76	75	73	72	70	68	66	63	61	58	55	52	50	47	44	42	39	3
0.193	75	75	74	73	72	71	69	67	65	63	60	58	55	52	50	47	44	42	39	3
0.200	74	74	73	72	71	70	68	66	64	62	60	57	55	52	50	47	44	42	39	3

RESULTS FOR USER DESIGNATED EXAMPLE a:\rerun\fec

INPUT IN MKS UNITS:

Fecal Coliform Distribution at a concentration of 59 MPN/100mL

M	H	DX	DY	U	B	KD
0.194E+05	0.200E+01	0.210E+00	0.700E-01	0.400E-02	0.100E+04	0.100E-04

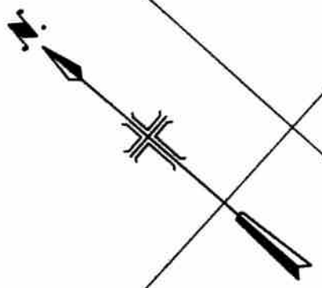
*** CONCENTRATION IN ORGANISMS PER 100 ML ***

EVALUATION IS FROM -5 TO 5

VALUES OF Y/B (COLUMNS) & X/B (ROWS):

	0.000	0.000	0.001	0.001	0.002	0.002	0.003	0.003	0.004	0.004	0.005	0.005	0.006	0.006	0.007	0.007	0.008	0.008	0.009	0.00
-0.010	5	5	5	5	5	5	4	4	4	4	4	4	4	4	4	4	4	3	3	
-0.009	5	5	5	5	5	5	5	5	4	4	4	4	4	4	4	4	4	4	3	
-0.009	5	5	5	5	5	5	5	5	5	4	4	4	4	4	4	4	4	4	3	
-0.008	5	5	5	5	5	5	5	5	5	4	4	4	4	4	4	4	4	4	4	
-0.008	5	5	5	5	5	5	5	5	5	5	4	4	4	4	4	4	4	4	4	
-0.007	6	6	5	5	5	5	5	5	5	5	5	4	4	4	4	4	4	4	4	
-0.007	6	6	6	6	5	5	5	5	5	5	5	5	4	4	4	4	4	4	4	
-0.007	6	6	6	6	6	6	5	5	5	5	5	5	4	4	4	4	4	4	4	
-0.006	6	6	6	6	6	6	6	5	5	5	5	5	5	4	4	4	4	4	4	
-0.005	6	6	6	6	6	6	6	5	5	5	5	5	5	4	4	4	4	4	4	
-0.005	7	7	7	6	6	6	6	6	5	5	5	5	5	5	4	4	4	4	4	
-0.005	7	7	7	7	6	6	6	6	5	5	5	5	5	5	4	4	4	4	4	
-0.004	7	7	7	7	7	6	6	6	6	5	5	5	5	5	4	4	4	4	4	
-0.004	8	8	7	7	7	7	6	6	6	5	5	5	5	5	5	4	4	4	4	
-0.003	8	8	8	7	7	7	6	6	6	6	5	5	5	5	5	4	4	4	4	
-0.003	9	8	8	8	7	7	6	6	6	6	5	5	5	5	5	4	4	4	4	
-0.002	9	9	8	8	7	7	7	6	6	6	5	5	5	5	5	4	4	4	4	
-0.002	10	10	9	8	8	7	7	6	6	6	6	5	5	5	5	5	4	4	4	
-0.001	11	10	9	8	8	7	7	6	6	6	6	5	5	5	5	5	4	4	4	
-0.001	13	11	10	9	8	7	7	6	6	6	6	5	5	5	5	5	4	4	4	
0.000	9999	11	10	9	8	7	7	7	6	6	6	5	5	5	5	5	4	4	4	
0.000	13	11	10	9	8	7	7	7	6	6	6	5	5	5	5	5	4	4	4	
0.001	11	11	9	9	8	7	7	7	6	6	6	5	5	5	5	5	5	4	4	
0.001	10	10	9	8	8	7	7	7	6	6	6	5	5	5	5	5	5	4	4	
0.002	10	9	9	8	8	7	7	7	6	6	6	5	5	5	5	5	5	4	4	
0.002	9	9	8	8	8	7	7	6	6	6	6	5	5	5	5	5	5	4	4	
0.003	9	8	8	8	7	7	7	6	6	6	6	5	5	5	5	5	5	4	4	
0.003	8	8	8	8	7	7	7	6	6	6	6	5	5	5	5	5	5	4	4	
0.004	8	8	8	7	7	7	7	6	6	6	6	5	5	5	5	5	5	4	4	
0.004	8	8	7	7	7	7	7	6	6	6	6	5	5	5	5	5	5	4	4	
0.005	7	7	7	7	7	7	6	6	6	6	6	5	5	5	5	5	5	4	4	
0.005	7	7	7	7	7	7	6	6	6	6	6	5	5	5	5	5	5	4	4	
0.006	7	7	7	7	7	6	6	6	6	6	5	5	5	5	5	5	5	4	4	
0.006	7	7	7	7	6	6	6	6	6	6	5	5	5	5	5	5	5	4	4	
0.007	7	7	7	6	6	6	6	6	6	6	5	5	5	5	5	5	5	4	4	
0.007	6	6	6	6	6	6	6	6	6	5	5	5	5	5	5	5	4	4	4	
0.008	6	6	6	6	6	6	6	6	6	5	5	5	5	5	5	5	4	4	4	
0.008	6	6	6	6	6	6	6	6	6	5	5	5	5	5	5	5	4	4	4	
0.009	6	6	6	6	6	6	6	6	5	5	5	5	5	5	5	5	4	4	4	
0.009	6	6	6	6	6	6	6	5	5	5	5	5	5	5	5	5	4	4	4	
0.010	6	6	6	6	6	6	6	5	5	5	5	5	5	5	5	5	4	4	4	

FIGURE 3-1
(REVISED)



E 2,423,000

1

2

N 241,000

3

A

B

C

4.0 MPN/100 mL

WASTEWATER
TREATMENT
PLANT OUTFALL

N 242,000

E 2,422,500

E 2,422,000

N 241,500

MALCOLM
PIRNIE

LEGEND:

CONTOUR REPRESENTS 4.0 MPN/100 mL

DYE TRACER STUDY SAMPLE LOCATIONS

AUGUST 1994
DAHLGREN, VIRGINIA
NAVAL SURFACE WARFARE CENTER
DAHLGREN STP ENVIRONMENTAL REPORT

FECAL COLIFORM DISTRIBUTION BASED ON 59 MPN/100 mL EFFLUENT CONCENTRATION

80 0 80
SCALE IN FEET

FIGURE 3-2
(REVISED)

E 2,423,000

N 241,000

1

2

3

A

B

C

14 MPN/100 mL

WASTEWATER
TREATMENT
PLANT OUTFALL

N 242,000

E 2,422,500

E 2,422,000

N 241,500

LEGEND:

CONTOUR REPRESENTS STATE HEALTH DEPARTMENT SHELLFISH HARVEST LIMIT

DYE TRACER STUDY SAMPLE LOCATIONS

AUGUST 1994
DAHLGREN, VIRGINIA
NAVAL SURFACE WARFARE CENTER
DAHLGREN STP ENVIRONMENTAL REPORT

FECAL COLIFORM DISTRIBUTION BASED ON 310 MPN/100 mL EFFLUENT CONCENTRATION

80 0 80
SCALE IN FEET

MALCOLM PIRNIE

FIGURE 3-3
(REVISED)

N

E 2,423,000

N 241,000

1

2

3

A

B

C

WASTEWATER
TREATMENT
PLANT OUTFALL

5%

10%

N 242,000

E 2,422,500

E 2,422,000

N 241,500

LEGEND:

CONTOURS REPRESENT PERCENT OF EFFLUENT CONCENTRATION

DYE TRACER STUDY SAMPLE LOCATIONS

AUGUST 1994
DAHLGREN, VIRGINIA
NAVAL SURFACE WARFARE CENTER
DAHLGREN STP ENVIRONMENTAL REPORT

DISTRIBUTION OF A CONSERVATIVE COMPOUND

80 0 80
SCALE IN FEET

MALCOLM PIRNIE

FIGURE 3-4
(REVISED)

N

E 2,423,000

N 241,000

1

2

3

A

B

C

WASTEWATER
TREATMENT
PLANT OUTFALL

1.0 µg/L

N 242,000

E 2,422,500

E 2,422,000

N 241,500

LEGEND:

CONTOURS REPRESENT CONCENTRATION IN µg/L

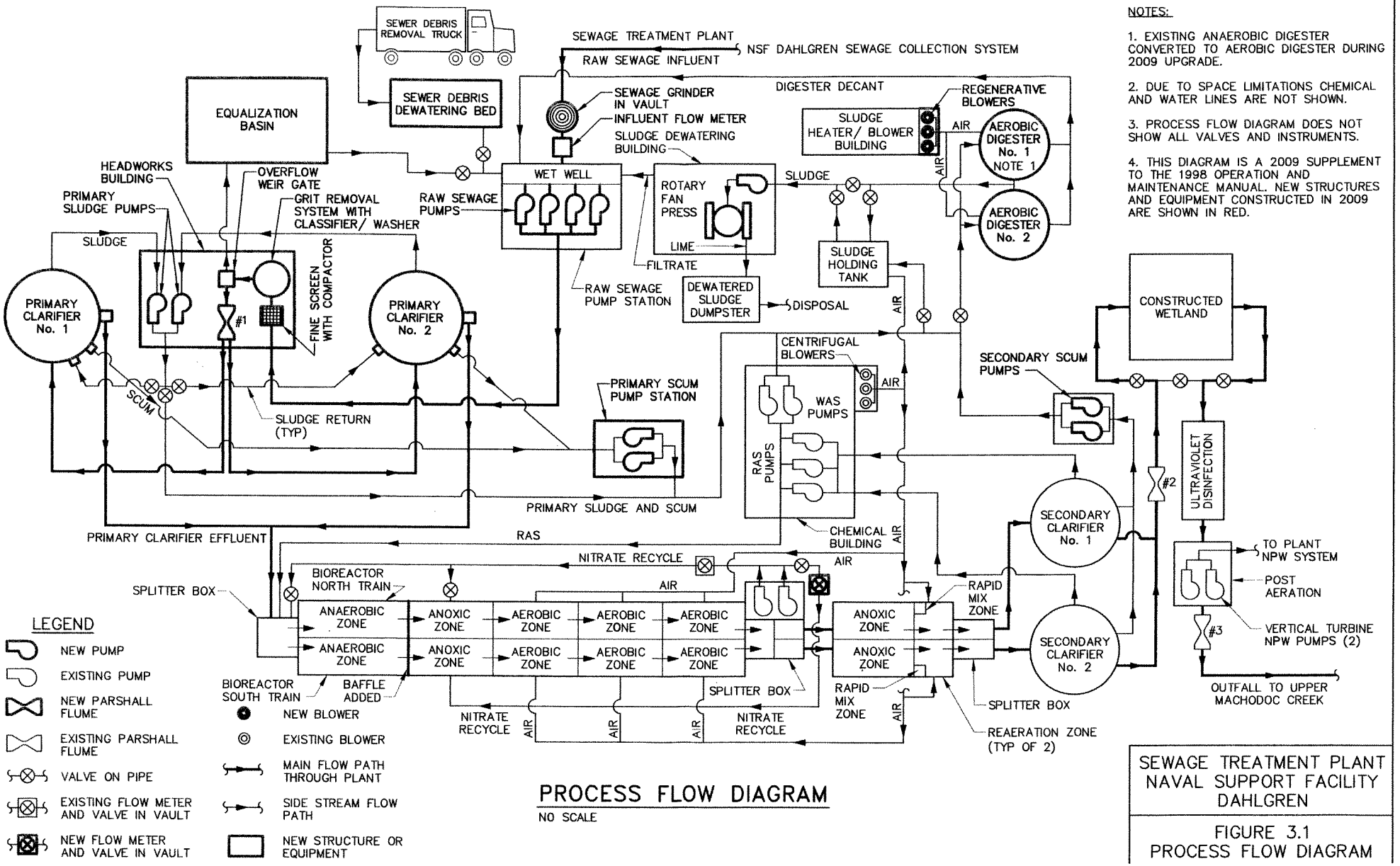
DYE TRACER STUDY SAMPLE LOCATIONS

AUGUST 1994
DAHLGREN, VIRGINIA
NAVAL SURFACE WARFARE CENTER
DAHLGREN STP ENVIRONMENTAL REPORT

CYANIDE DISTRIBUTION
BASED ON 20 µg/L
EFFLUENT CONCENTRATION

80 0 80
SCALE IN FEET

MALCOLM PIRNIE



NOTES:

1. EXISTING ANAEROBIC DIGESTER CONVERTED TO AEROBIC DIGESTER DURING 2009 UPGRADE.
2. DUE TO SPACE LIMITATIONS CHEMICAL AND WATER LINES ARE NOT SHOWN.
3. PROCESS FLOW DIAGRAM DOES NOT SHOW ALL VALVES AND INSTRUMENTS.
4. THIS DIAGRAM IS A 2009 SUPPLEMENT TO THE 1998 OPERATION AND MAINTENANCE MANUAL. NEW STRUCTURES AND EQUIPMENT CONSTRUCTED IN 2009 ARE SHOWN IN RED.

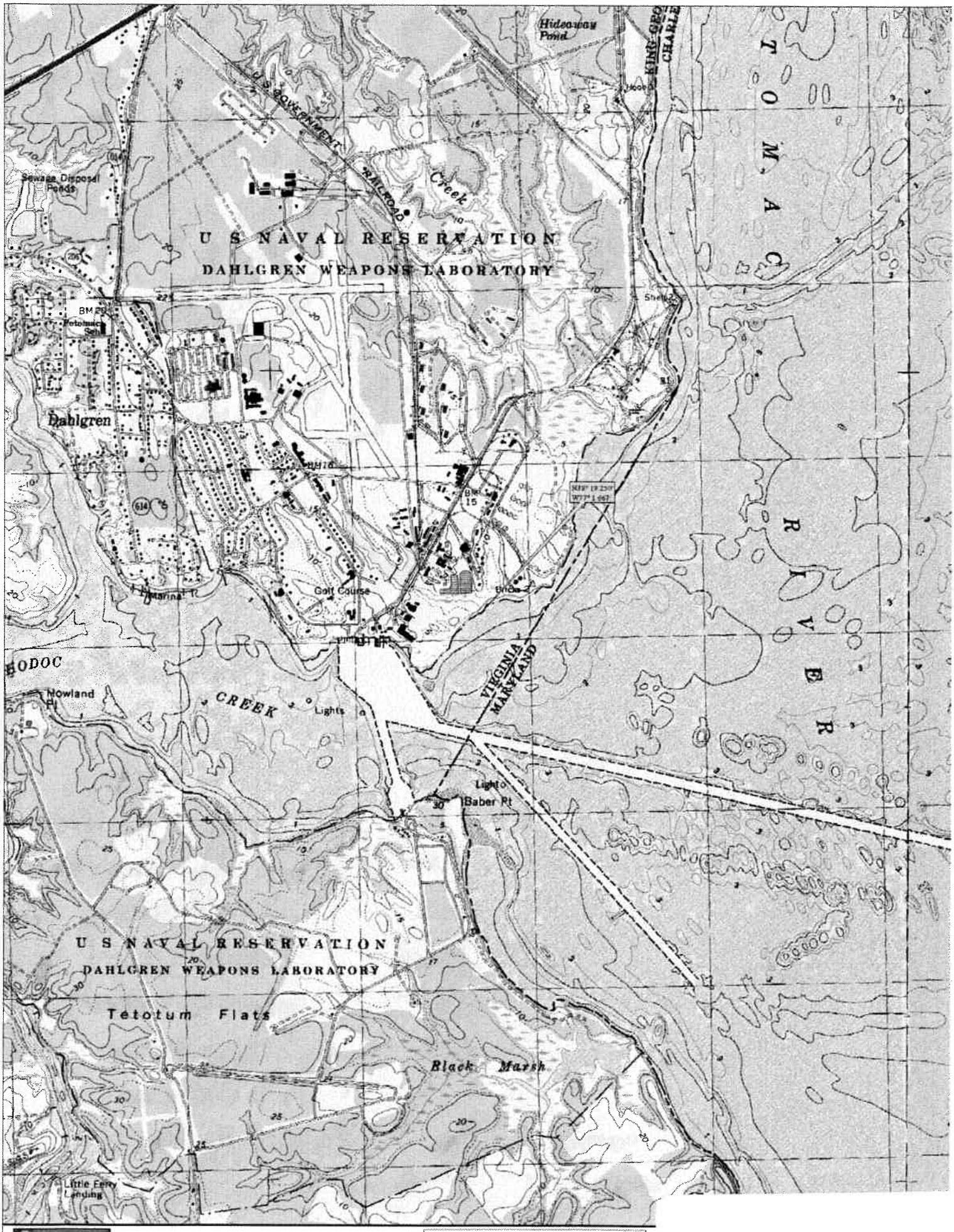
PROCESS FLOW DIAGRAM

NO SCALE

SEWAGE TREATMENT PLANT
NAVAL SUPPORT FACILITY
DAHLGREN

FIGURE 3.1
PROCESS FLOW DIAGRAM

Attachment



Attachment 3

MEMORANDUM

TO: File

FROM: Douglas Frasier

DATE: 3 November 2010

SUBJECT: Site Visit – Naval Support Facility Dahlgren – VA0021067

I conducted a site visit at the Naval Support Facility Dahlgren on 2 November 2010 as part of the permit reissuance. Facility staff provided a brief tour of the facility. The facility is located in King George County.

Primary treatment consists of grinders, grit removal and fine screening. The original design included Primary Clarifiers after screening, but the facility is operating those units as fermentation units. Flow then enters the bioreactors. Upgrades included a dual train with anoxic and aerobic zones for denitrification and nitrification. The facility has two secondary clarifiers which are followed by constructed wetlands for phosphorus removal. Effluent is then disinfected via UV, post aeration and final discharge. Solids handling include two aerobic digesters and a rotary fan press for dewatering prior to final disposal.

Facility has undergone upgrades for nutrient removal and plans are in the works for further enhancement. Condition of the plant and the equipment was excellent.

Attachment 4

Dissolved Oxygen Criteria (9 VAC 25-260-185)

Designated Use	Criteria Concentration/Duration	Temporal Application
Migratory fish spawning and nursery	7-day mean > 6 mg/L (tidal habitats with 0-0.5 ppt salinity)	February 1 – May 31
	Instantaneous minimum > 5 mg/L	
Open-water[1,2]	30-day mean > 5.5 mg/L (tidal habitats with 0-0.5 ppt salinity) 30-day mean > 5 mg/L (tidal habitats with >0.5 ppt salinity)	Year-round
	7-day mean > 4 mg/L	
	Instantaneous minimum > 3.2 mg/L at temperatures < 29°C Instantaneous minimum > 4.3 mg/L at temperatures > 29°C	
Deep-water	30-day mean >3 mg/L	June 1-September 30
	1-day mean > 2.3 mg/L	
	Instantaneous minimum > 1.7 mg/L	
Deep-channel	Instantaneous minimum > 1 mg/L	June 1-September 30

[1]See subsection aa of 9 VAC 25-260-310 for site specific seasonal open-water dissolved oxygen criteria applicable to the tidal Mattaponi and Pamunkey Rivers and their tidal tributaries.

[2]In applying this open-water instantaneous criterion to the Chesapeake Bay and its tidal tributaries where the existing water quality for dissolved oxygen exceeds an instantaneous minimum of 3.2 mg/L, that higher water quality for dissolved oxygen shall be provided antidegradation protection in accordance with section 30 subsection A.2 of the Water Quality Standards.

SALTWATER AND TRANSITION ZONES
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Naval Support Facility Dahlgren Permit No.: VA0021067 Version: OWP Guidance Memo 00-2011 (8/24/00)
Receiving Stream: Upper Machodoc Creek

Stream Information

Mean Hardness (as CaCO3) =	50	mg/l
90th % Temperature (Annual) =	25	(° C)
90th % Temperature (Winter) =		(° C)
90th % Maximum pH =	8	
10th % Maximum pH =		
Tier Designation (1 or 2) =	1	
Early Life Stages Present Y/N =	Y	
Tidal Zone =	1	(1 = saltwater, 2 = transition zone)
Mean Salinity =	10	(g/kg)

Mixing Information

Design Flow (MGD)	0.72
Acute WLA multiplier	10
Chronic WLA multiplier	20
Human health WLA multiplier	

Effluent Information

Mean Hardness (as CaCO3) =	50	mg/L
90 % Temperature (Annual) =	25	(° C)
90 % Temperature (Winter) =		(° C)
90 % Maximum pH =	8	SU
10 % Maximum pH =		SU
Discharge Flow =	0.72	MGD

Parameter	Background	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			**Most Limiting Allocations**		
(ug/l unless noted)	Conc.	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	**Acute**	**Chronic**	**HH**
Acenapthene	0	--	--	9.9E+02	--	--	0.0E+00	--	--	--	--	--	--	**--**	**--**	**0.0E+00**
Acrolein		--	--	9.3E+00	--	--	0.0E+00	--	--	--	--	--	--	**--**	**--**	**0.0E+00**
Acrylonitrile[C]		--	--	2.5E+00	--	--	0.0E+00	--	--	--	--	--	--	**--**	**--**	**0.0E+00**
Aldrin [C]	0	1.3E+00	--	5.0E-04	1.3E+01	--	0.0E+00	--	--	--	--	--	--	**1.3E+01**	**--**	**0.0E+00**
Ammonia-N (mg/l) - Annual	0	3.76E+00	5.66E-01	--	3.76E+01	1.13E+01	--	--	--	--	--	--	--	**3.76E+01**	**1.13E+01**	**--**
Ammonia-N (mg/l) - Winter	0	2.32E+01	3.50E+00	--	2.32E+02	7.00E+01	--	--	--	--	--	--	--	**2.32E+02**	**7.00E+01**	**--**
Anthracene	0	--	--	4.0E+04	--	--	0.0E+00	--	--	--	--	--	--	**--**	**--**	**0.0E+00**
Antimony	0	--	--	6.4E+02	--	--	0.0E+00	--	--	--	--	--	--	**--**	**--**	**0.0E+00**
Arsenic	0	6.9E+01	3.6E+01	--	6.9E+02	7.2E+02	--	--	--	--	--	--	--	**6.9E+02**	**7.2E+02**	**--**
Benzene [C]	0	--	--	5.1E+02	--	--	0.0E+00	--	--	--	--	--	--	**--**	**--**	**0.0E+00**
Benzidine[C]		--	--	2.0E-03	--	--	0.0E+00	--	--	--	--	--	--	**--**	**--**	**0.0E+00**
Benzo (a) anthracene [C]	0	--	--	1.8E-01	--	--	0.0E+00	--	--	--	--	--	--	**--**	**--**	**0.0E+00**
Benzo (b) fluoranthene [C]	0	--	--	1.8E-01	--	--	0.0E+00	--	--	--	--	--	--	**--**	**--**	**0.0E+00**
Benzo (k) fluoranthene [C]	0	--	--	1.8E-01	--	--	0.0E+00	--	--	--	--	--	--	**--**	**--**	**0.0E+00**
Benzo (a) pyrene [C]	0	--	--	1.8E-01	--	--	0.0E+00	--	--	--	--	--	--	**--**	**--**	**0.0E+00**
Bis2-Chloroethyl Ether[C]	0	--	--	5.3E+00	--	--	0.0E+00	--	--	--	--	--	--	**--**	**--**	**0.0E+00**
Bis2-Chloroisopropyl Ether	0	--	--	6.5E+04	--	--	0.0E+00	--	--	--	--	--	--	**--**	**--**	**0.0E+00**
Bis2-Ethylhexyl Phthalate[C]	0	--	--	2.2E+01	--	--	0.0E+00	--	--	--	--	--	--	**--**	**--**	**0.0E+00**
Bromoform [C]	0	--	--	1.4E+03	--	--	0.0E+00	--	--	--	--	--	--	**--**	**--**	**0.0E+00**
Butylbenzylphthalate	0	--	--	1.9E+03	--	--	0.0E+00	--	--	--	--	--	--	**--**	**--**	**0.0E+00**
Cadmium	0	4.0E+01	8.8E+00	--	4.0E+02	1.8E+02	--	--	--	--	--	--	--	**4.0E+02**	**1.8E+02**	**--**
Carbon Tetrachloride [C]	0	--	--	1.6E+01	--	--	0.0E+00	--	--	--	--	--	--	**--**	**--**	**0.0E+00**
Chlordane [C]	0	9.0E-02	4.0E-03	8.1E-03	9.0E-01	8.0E-02	0.0E+00	--	--	--	--	--	--	**9.0E-01**	**8.0E-02**	**0.0E+00**

Attachment 6

Parameter	Background	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			**Most Limiting Allocations**		
(ug/l unless noted)	Conc.	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	**Acute**	**Chronic**	**HH**
TRC	0			--			--	--	--	--	--	--	--	--	--	--
Chlorine Prod. Oxidant	0	1.3E+01	7.5E+00	--	1.3E+02	1.5E+02	--	--	--	--	--	--	--	**1.3E+02**	**1.5E+02**	--
Chlorobenzene		--	--	1.6E+03	--	--	0.0E+00	--	--	--	--	--	--	--	--	**0.0E+00**
Chlorodibromomethane[C]	0	--	--	1.3E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	**0.0E+00**
Chloroform	0	--	--	1.1E+04	--	--	0.0E+00	--	--	--	--	--	--	--	--	**0.0E+00**
2-Chloronaphthalene	0	--	--	1.6E+03	--	--	0.0E+00	--	--	--	--	--	--	--	--	**0.0E+00**
2-Chlorophenol	0	--	--	1.5E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	**0.0E+00**
Chlorpyrifos	0	1.1E-02	5.6E-03	--	1.1E-01	1.1E-01	--	--	--	--	--	--	--	**1.1E-01**	**1.1E-01**	--
Chromium III	0			--			--	--	--	--	--	--	--	--	--	--
Chromium VI	0	1.1E+03	5.0E+01	--	1.1E+04	1.0E+03	--	--	--	--	--	--	--	**1.1E+04**	**1.0E+03**	--
Chrysene[C]	0	--	--	1.8E-02	--	--	0.0E+00	--	--	--	--	--	--	--	--	**0.0E+00**
Copper	0	9.3E+00	6.0E+00	--	9.3E+01	1.2E+02	--	--	--	--	--	--	--	**9.3E+01**	**1.2E+02**	--
Cyanide, Free	0	1.0E+00	1.0E+00	1.6E+04	1.0E+01	2.0E+01	0.0E+00	--	--	--	--	--	--	**1.0E+01**	**2.0E+01**	**0.0E+00**
DDD[C]	0	--	--	3.1E-03	--	--	0.0E+00	--	--	--	--	--	--	--	--	**0.0E+00**
DDE[C]	0	--	--	2.2E-03	--	--	0.0E+00	--	--	--	--	--	--	--	--	**0.0E+00**
DDT[C]	0	1.3E-01	1.0E-03	2.2E-03	1.3E+00	2.0E-02	0.0E+00	--	--	--	--	--	--	**1.3E+00**	**2.0E-02**	**0.0E+00**
Demeton	0	--	1.0E-01	--	--	2.0E+00	--	--	--	--	--	--	--	--	**2.0E+00**	--
Diazinon	0	8.2E-01	8.2E-01	--	8.2E+00	1.6E+01	--	--	--	--	--	--	--	**8.2E+00**	**1.6E+01**	--
Dibenz(a,h)anthracene[C]	0	--	--	1.8E-01	--	--	0.0E+00	--	--	--	--	--	--	--	--	**0.0E+00**
1,2-Dichlorobenzene	0	--	--	1.3E+03	--	--	0.0E+00	--	--	--	--	--	--	--	--	**0.0E+00**
1,3-Dichlorobenzene	0	--	--	9.6E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	**0.0E+00**
1,4-Dichlorobenzene	0	--	--	1.9E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	**0.0E+00**
3,3-Dichlorobenzidine[C]	0	--	--	2.8E-01	--	--	0.0E+00	--	--	--	--	--	--			
Dichlorobromomethane[C]	0	--	--	1.7E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	**0.0E+00**
1,2-Dichloroethane[C]	0	--	--	3.7E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	**0.0E+00**
1,1-Dichloroethylene	0	--	--	7.1E+03	--	--	0.0E+00	--	--	--	--	--	--	--	--	**0.0E+00**
1,2-trans-dichloroethylene	0	--	--	1.0E+04	--	--	0.0E+00	--	--	--	--	--	--	--	--	**0.0E+00**
2,4-Dichlorophenol	0	--	--	2.9E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	**0.0E+00**
1,2-Dichloropropane[C]	0	--	--	1.5E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	**0.0E+00**
1,3-Dichloropropene[C]	0	--	--	2.1E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	**0.0E+00**
Dieldrin[C]	0	7.1E-01	1.9E-03	5.4E-04	7.1E+00	3.8E-02	0.0E+00	--	--	--	--	--	--	**7.1E+00**	**3.8E-02**	**0.0E+00**
Diethyl Phthalate	0	--	--	4.4E+04	--	--	0.0E+00	--	--	--	--	--	--	--	--	**0.0E+00**
2,4-Dimethylphenol	0	--	--	8.5E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	**0.0E+00**
Dimethyl Phthalate	0	--	--	1.1E+06	--	--	0.0E+00	--	--	--	--	--	--	--	--	**0.0E+00**
Di-n-Butyl Phthalate	0	--	--	4.5E+03	--	--	0.0E+00	--	--	--	--	--	--	--	--	**0.0E+00**
2,4 Dinitrophenol	0	--	--	5.3E+03	--	--	0.0E+00	--	--	--	--	--	--	--	--	**0.0E+00**
2-Methyl-4,6-Dinitrophenol	0	--	--	2.8E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	**0.0E+00**
2,4-Dinitrotoluene[C]	0	--	--	3.4E+01	--	--	0.0E+00	--	--	--	--	--	--	--	--	**0.0E+00**
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	--	--	5.1E-08	--	--	0.0E+00	--	--	--	--	--	--	--	--	**0.0E+00**
1,2-Diphenylhydrazine[C]	0	--	--	2.0E+00	--	--	0.0E+00	--	--	--	--	--	--	--	--	**0.0E+00**
Alpha-Endosulfan	0	3.4E-02	8.7E-03	8.9E+01	3.4E-01	1.7E-01	0.0E+00	--	--	--	--	--	--	**3.4E-01**	**1.7E-01**	**0.0E+00**

Parameter	Background	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
(ug/l unless noted)	Conc.	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH
Beta-Endosulfan	0	3.4E-02	8.7E-03	8.9E+01	3.4E-01	1.7E-01	0.0E+00	--	--	--	--	--	--	3.4E-01	1.7E-01	0.0E+00
Alpha + Beta Endosulfan	0	3.4E-02	8.7E-03	--	3.4E-01	1.7E-01	--	--	--	--	--	--	--	3.4E-01	1.7E-01	--
Endosulfan Sulfate	0	--	--	8.9E+01	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Endrin	0	3.7E-02	2.3E-03	6.0E-02	3.7E-01	4.6E-02	0.0E+00	--	--	--	--	--	--	3.7E-01	4.6E-02	0.0E+00
Endrin Aldehyde	0	--	--	3.0E-01	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Ethylbenzene	0	--	--	2.1E+03	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Fluoranthene	0	--	--	1.4E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Fluorene	0	--	--	5.3E+03	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Guthion	0	--	1.0E-02	--	--	2.0E-01	--	--	--	--	--	--	--	--	2.0E-01	--
Heptachlor [C]	0	5.3E-02	3.6E-03	7.9E-04	5.3E-01	7.2E-02	0.0E+00	--	--	--	--	--	--	5.3E-01	7.2E-02	0.0E+00
Heptachlor Epoxide[C]	0	5.3E-02	3.6E-03	3.9E-04	5.3E-01	7.2E-02	0.0E+00	--	--	--	--	--	--	5.3E-01	7.2E-02	0.0E+00
Hexachlorobenzene[C]	0	--	--	2.9E-03	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Hexachlorobutadiene[C]	0	--	--	1.8E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Hexachlorocyclohexane Alpha BHC[C]	0	--	--	4.9E-02	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Hexachlorocyclohexane Beta-BHC[C]	0	--	--	1.7E-01	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Hexachlorocyclohexane Gamma-BHC[C] (Lindane)	0	1.6E-01	--	1.8E+00	1.6E+00	--	0.0E+00	--	--	--	--	--	--	1.6E+00	--	0.0E+00
Hexachlorocyclopentadiene	0	--	--	1.1E+03	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Hexachloroethane[C]	0	--	--	3.3E+01	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Hydrogen Sulfide	0	--	2.0E+00	--	--	4.0E+01	--	--	--	--	--	--	--	--	4.0E+01	--
Indeno (1,2,3-cd) pyrene C	0	--	--	1.8E-01	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Isophorone[C]	0	--	--	9.6E+03	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Kepone	0	--	0.0E+00	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00	--
Lead	0	2.4E+02	9.3E+00	--	2.4E+03	1.9E+02	--	--	--	--	--	--	--	2.4E+03	1.9E+02	--
Malathion	0	--	1.0E-01	--	--	2.0E+00	--	--	--	--	--	--	--	--	2.0E+00	--
Mercury	0	1.8E+00	9.4E-01	--	1.8E+01	1.9E+01	--	--	--	--	--	--	--	1.8E+01	1.9E+01	--
Methyl Bromide	0	--	--	1.5E+03	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Methylene Chloride [C]	0	--	--	5.9E+03	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Methoxychlor	0	--	3.0E-02	--	--	6.0E-01	--	--	--	--	--	--	--	--	6.0E-01	--
Mirex	0	--	0.0E+00	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00	--
Nickel	0	7.4E+01	8.2E+00	4.6E+03	7.4E+02	1.6E+02	0.0E+00	--	--	--	--	--	--	7.4E+02	1.6E+02	0.0E+00
Nitrobenzene	0	--	--	6.9E+02	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
N-Nitrosodimethylamine[C]	0	--	--	3.0E+01	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
N-Nitrosodiphenylamine[C]	0	--	--	6.0E+01	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
N-Nitrosodi-n-propylamine[C]	0	--	--	5.1E+00	--	--	0.0E+00	--	--	--	--	--	--	--	--	0.0E+00
Nonylphenol	0	7.0E+00	1.7E+00	--	7.0E+01	3.4E+01	--	--	--	--	--	--	--	7.0E+01	3.4E+01	--
Parathion	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB Total[C]	0	--	3.0E-02	6.4E-04	--	6.0E-01	0.0E+00	--	--	--	--	--	--	--	6.0E-01	0.0E+00
Pentachlorophenol [C]	0	1.3E+01	7.9E+00	3.0E+01	1.3E+02	1.6E+02	0.0E+00	--	--	--	--	--	--	1.3E+02	1.6E+02	0.0E+00

Parameter	Background	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			**Most Limiting Allocations**		
(ug/l unless noted)	Conc.	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	Acute	Chronic	HH	**Acute**	**Chronic**	**HH**
Phenol	0	--	--	8.6E+05	--	--	0.0E+00	--	--	--	--	--	--	**--**	**--**	**0.0E+00**
Phosphorus (Elemental)	0	--	1.0E-01	--	--	2.0E+00	--	--	--	--	--	--	--	**--**	**2.0E+00**	**--**
Pyrene	0	--	--	4.0E+03	--	--	0.0E+00	--	--	--	--	--	--	**--**	**--**	**0.0E+00**
Radionuclides Beta and Photon Activity (mrem/yr)	0	--	--	--	--	--	--	--	--	--	--	--	--	**--**	**--**	**--**
	0	--	--	4.0E+00	--	--	0.0E+00	--	--	--	--	--	--	**--**	**--**	**0.0E+00**
Selenium	0	2.9E+02	7.1E+01	4.2E+03	2.9E+03	1.4E+03	0.0E+00	--	--	--	--	--	--	**2.9E+03**	**1.4E+03**	**0.0E+00**
Silver	0	1.9E+00	--	--	1.9E+01	--	--	--	--	--	--	--	--	**1.9E+01**	**--**	**--**
1,1,2,2-Tetrachloroethane[C]	0	--	--	4.0E+01	--	--	0.0E+00	--	--	--	--	--	--	**--**	**--**	**0.0E+00**
Tetrachloroethylene[C]	0	--	--	3.3E+01	--	--	0.0E+00	--	--	--	--	--	--	**--**	**--**	**0.0E+00**
Thallium	0	--	--	4.7E-01	--	--	0.0E+00	--	--	--	--	--	--	**--**	**--**	**0.0E+00**
Toluene	0	--	--	6.0E+03	--	--	0.0E+00	--	--	--	--	--	--	**--**	**--**	**0.0E+00**
Toxaphene [C]	0	2.1E-01	2.0E-04	2.8E-03	2.1E+00	4.0E-03	0.0E+00	--	--	--	--	--	--	**2.1E+00**	**4.0E-03**	**0.0E+00**
Tributyltin	0	4.2E-01	7.4E-03	--	4.2E+00	1.5E-01	--	--	--	--	--	--	--	**4.2E+00**	**1.5E-01**	**--**
1,2,4-Trichlorobenzene	0	--	--	7.0E+01	--	--	0.0E+00	--	--	--	--	--	--	**--**	**--**	**0.0E+00**
1,1,2-Trichloroethane[C]		--	--	1.6E+02	--	--	0.0E+00	--	--	--	--	--	--	**--**	**--**	**0.0E+00**
Trichloroethylene [C]	0	--	--	3.0E+02	--	--	0.0E+00	--	--	--	--	--	--	**--**	**--**	**0.0E+00**
2,4,6-Trichlorophenol [C]	0	--	--	2.4E+01	--	--	0.0E+00	--	--	--	--	--	--	**--**	**--**	**0.0E+00**
Vinyl Chloride[C]	0	--	--	2.4E+01	--	--	0.0E+00	--	--	--	--	--	--	**--**	**--**	**0.0E+00**
Zinc	0	9.0E+01	8.1E+01	2.6E+04	9.0E+02	1.6E+03	0.0E+00	--	--	--	--	--	--	**9.0E+02**	**1.6E+03**	**0.0E+00**

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. For transition zone waters, spreadsheet prints the lesser of the freshwater and saltwater water quality criteria.
6. Regular WLA = (WQC x WLA multiplier) - (WLA multiplier - 1)(background conc.)
7. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
8. Antideg. WLA = (Antideg. Baseline)(WLA multiplier) - (WLA multiplier - 1)(background conc.)

Metal	Site Specific Target Value (SSTV)
Antimony	0.0E+00
Arsenic III	2.8E+02
Cadmium	1.1E+02
Chromium III	#VALUE!
Chromium VI	6.0E+02
Copper	3.7E+01
Lead	1.1E+02
Mercury	7.2E+00
Nickel	0.0E+00
Selenium	0.0E+00
Silver	7.6E+00
Zinc	0.0E+00

Note: do not use QL's lower than the minimum QL's provided in agency guidance

Stream/Discharge Mix Values

	Acute	Chronic
Hardness	50.00	50.00
Hardness used	50.00	50.00
90th % pH	8.00	8.00
10th % pH	0.00	0.00
90th % Temp (Annual)	25.00	25.00
90th % Temp (Winter)	0.00	0.00
Salinity	9.00	9.50

Ammonia Criteria Determinations

Freshwater Ammonia Criteria - Annual

Duration	NH3-N
Acute	8.41
Chronic - ELS present	1.24
Chronic - ELS absent	1.24

Saltwater Ammon. Criteria - Annual

Duration	NH3-N
Acute	3.76
Chronic	0.57

Freshwater Ammonia Criteria - Winter

Duration	NH3-N
Acute	8.41
Chronic - ELS present	2.43
Chronic - ELS absent	3.95

Saltwater Ammon. Criteria - Winter

Duration	NH3-N
Acute	23.22
Chronic	3.50

M E M O R A N D U M

DEPARTMENT OF ENVIRONMENTAL QUALITY

Northern Regional Office

1549 Old Bridge Road, Suite 108 Woodbridge, Virginia 22192 (703) 490-8922

SUBJECT: Plans and Specifications for Sewage Treatment Plants

TO: Peter W. Schmidt, Director

FROM: Alan L. Laubscher, Regional Permits Manager, NRO

DATE: February 23, 1995

Project Name:	Upgrade Sewage Treatment Plant, Naval Surface Warfare Center, Dahlgren, Virginia, Contract No. N62477-91-C-0260, A&E Commission No. 1761A
Project Owner:	U. S. Department of the Navy, Naval Surface Warfare Center, Dahlgren Division
Project Scope:	This project involves the upgrade and expansion of Dahlgren NSWC sewage treatment plant. The project consists of the installation of a 0.72 MGD sewage treatment works consisting of bar screens, dissolved air floatation unit, raw sewage influent pumping station, biological reactors with anoxic and aerobic zones, secondary clarifiers, chemical addition, ultra-violet disinfection, backup chlorination dechlorination, and post aeration. Solids handling consists of existing anaerobic digestion. A lime feeder with belt filter press is provided as backup.
Design Basis:	This project has been designed for an average flow of 0.072 MGD. The proposed facilities have been designed to comply with effluent limits of 30 mg/l BOD5 and TSS, 6.2 mg/l for ammonia and 200 MPN/100ml for fecal coliform. The facilities are also designed to meet anticipated future limits of 2 mg/l for total phosphorus, 5 mg/l for ammonia nitrogen and 7 mg/l for total nitrogen.
Previous Agency Action:	The facility is required to take the polishing ponds at the treatment facilities off-line as soon as possible in order to meet waste management regulations.
Virginia Department of Health Action:	By letter dated January 9, 1995 the Virginia Department of Health conditionally approved the plans and specifications as noted in their letter report.
Staff Comments:	None

Attachment 7

STAFF RECOMMENDATIONS:

The staff recommends that the Director:

Conditionally approve the plans and specifications subject to the following conditions:

1. An operation and maintenance manual and biosolids management plan must be submitted to the Virginia Department of Health and this office for review and approval prior to operation of this project.

2. If the biosolids treatment and handling capacity provided by this treatment works fails to meet the state and federal technical requirements for biosolids management, a plan outlining the necessary corrective action must be submitted to this Department and the Department of Health within 60 days upon notice to the owner.

3. Ultraviolet disinfection represents new technology for which limited performance is available; therefore, one year of testing for fecal coliform bacteria shall be initiated to evaluate the performance of the UV disinfection system following start-up. A minimum sampling frequency of three (3) samples per week is recommended.

APPROVED: Thomas L Clayton
for Director, Department of Environmental Quality

DATE: Feb 28, 1995

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY

Northern Virginia Regional Office

1549 Old Bridge Road, Suite 108 Woodbridge, Virginia 22192 (703) 490-8922

SUBJECT: Plans and Specifications for Sewage Treatment Plants

TO: Peter W. Schmidt, Director

FROM: Alan L. Laubscher, Regional Permit Manager, NRO

DATE: September 22, 1995

Project Name:	Final Submission Closure of Existing Polishing Ponds and Constructed Wetlands
Project Owner:	Naval Surface Warfare Center, Dahlgren
Project Scope:	This project involves the closure of the existing polishing ponds and the installation of constructed wetlands at the existing sewage treatment plant.
Previous Agency Action:	The facility has been in compliance with its permit during the last quarter.
Virginia Department of	By letter dated August 3, 1995 the Virginia Department of Health conditionally approved the plans and specifications as noted in their letter report.
Staff Comments:	The two existing polishing ponds are being closed due to waste sludges and earth cover in the polishing ponds being classified as an EPA hazardous waste F006 (sludge from electroplating operations).

STAFF RECOMMENDATIONS:

The staff recommends that the Director:

Conditionally approve the plans and specifications subject to the following conditions:

1) This approval is contingent upon the successful completion of hazardous waste closure activities associated with the polishing ponds. The removal of all contaminants outlined in the approved hazardous waste closure plan must be completed for soils and clean closure demonstrated for groundwater, and clean closure must be acknowledged by the Department of Environmental Quality prior to proceeding with the construction of the constructed wetland. In the event the hazardous waste unit cannot be clean closed for either soils or groundwater, DEQ must be contacted in order to evaluate any options that may be available for the relocation or redesign of the wetland.

2) The media size of the constructed wetland material be increased to a stone or rock of 1/2 to 1 inch size range. Also, the 10 inch diameter sludge removal pipe in each wetland needs to be fitted with three capped observation tees of six inch or larger size spaced approximately equidistant apart.

APPROVED: Gregory L Clayton
for Director, Department of Environmental Quality

DATE: Sept 26, 1995

COMMONWEALTH of VIRGINIA

RANDOLPH L. GORDON, M.D., M.P.H.
COMMISSIONER

Department of Health
Office of Water Programs

ENVIRONMENTAL ENGINEERING FIELD OFFICE
400 S. MAIN ST. - 2ND FLOOR
CULPEPER, VA 22701
PHONE: 540-829-7340
FAX: 540-829-7337

SUBJECT: King George County
Sewerage - Dahlgren NSWC

Mr. W. E. Goss, Jr., Head
Safety Environmental Office
Dahlgren NSWC
17320 Dahlgren Road
Dahlgren, VA 22448-5100

Dear Mr. Goss:

Enclosed is the Certificate to Operate (CTO) for the Dahlgren NSWC Sewage Treatment Works.

This action is in accordance with Section 2.06 of the Virginia *Sewerage Regulations*.

If you have any questions regarding the CTO, please feel free to contact this office.

Sincerely,

Hugh J. Eggborn, P.E.
Engineering Field Director

JSD/plw
CC: DEQ - Water - Woodbridge
King George County Health Department
OWP - Central
O:\msw\king\s\dahlgrennswc-1a

Post-it™ Fax Note 7671	Date 5/21	# of pages ▶ 3
To J. DESAI	From AYOUNG	
Co./Dept. VDH	Co. DEQ	
Phone #	Phone #	
Fax #	Fax #	

VDH VIRGINIA DEPARTMENT OF HEALTH

COMMONWEALTH of VIRGINIA

RANDOLPH L. GORDON, M.D., M.P.H.
COMMISSIONER

Department of Health
Office of Water Programs

ENVIRONMENTAL ENGINEERING FIELD OFFICE
400 S. MAIN ST. - 2ND FLOOR
CULPEPER, VA 22701
PHONE: 540-829-7340
FAX: 540-829-7337

CERTIFICATE TO OPERATE

Owner: Dahlgren Naval Surface Warfare Center

Facility/System Name: Dahlgren NSWC STW

VPDES Permit Number: VA0021067

Description of the Facility/System: The project included the construction of a 0.72 MGD sewage treatment works consisting of bar screens, dissolved air flotation (DAF) unit, raw sewage influent pumping station, biological reactors with anoxic and aerobic zones, secondary clarifiers, chemical addition, ultra-violet disinfection, chlorination/dechlorination (to be utilized only when UV system is out of service) and postaeration.

Authorization to Operate: By letters dated October 30, 1997, as well as March 26, 1998, the firm of Hays, Seay, Mattern and Mattern certified that the construction was substantially completed in accordance with approved plans and specifications. A staff member from the State Health Department conducted an inspection of the above facilities on November 19, 1997. Therefore, the owner is authorized to operate these facilities with the following conditions:

1. An operation and maintenance manual and biosolids management plan must be submitted to the State Health Department and the Department of Environmental Quality for review and approval within thirty (30) days of the issuance of this Certificate to Operate (CTO).

2. All remaining punchlist items as indicated on updated list dated March 17, 1998 must be completed within thirty (30) days of the issuance of this Certificate to Operate, with the exception of constructed wetlands, which may follow a separate construction schedule tied to the closure of the polishing ponds.

CERTIFICATE TO OPERATE
Page 2

CONCURRENCE

Hugh J. Eggborn

Hugh J. Eggborn, P.E., Engineering Field Director
State Department of Health

4/6/98
Date

ISSUANCE

Thomas A. Gahr

for David A. Johnson, Chief Deputy Director
DEpartment of Environmental Quality

4/15/98
Date

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COMMONWEALTH of VIRGINIA

E. Anne Peterson, M.D., M.P.H.
COMMISSIONER

Department of Health
Office of Water Programs

ENVIRONMENTAL ENGINEERING FIELD OFFICE
400 S. MAIN ST. - 2ND FLOOR
CULPEPER, VA 22701
PHONE: 540-829-7340
FAX: 540-829-7337

MEMORANDUM

DATE: SEP 28 2000

TO: Dennis Treacy, Director
Department of Environmental Quality, Water Regional Office, Woodbridge

FROM: Robert J. VanLier, P.E., Engineering Field Representative
State Health Department, Division of Wastewater Engineering

SUBJECT: King George County - Sewerage - Dahlgren NSWC STW

Please find enclosed the Certificate to Operate (CTO) for the above-mentioned facility. Please process in our usual fashion.

PLEASE STAMP THIS PAGE ONLY

COMMONWEALTH of VIRGINIA

E. Anne Peterson, M.D., M.P.H.
COMMISSIONER

Department of Health
Office of Water Programs

ENVIRONMENTAL ENGINEERING FIELD OFFICE
400 S. MAIN ST. - 2ND FLOOR
CULPEPER, VA 22701
PHONE: 540-829-7340
FAX: 540-829-7337

SUBJECT: King George County
Sewerage - Dahlgren NSWC STW

Mr. Gary Vick
Dahlgren Naval Surface Weapons Center
Public Works Officer
Department of Public Works
Building 182
Dahlgren, VA 22448-5000

Dear Mr. Vick:

Enclosed is the Certificate to Operate (CTO) for the Dahlgren NSWC STW

This action is in accordance with Section 2.06 of the Virginia ***Sewerage Regulations***.

If you have any questions regarding the CTO, please feel free to contact this office.

Sincerely,

Robert J. VanLier, P.E.
Engineering Field Representative

RJV/tjb
cc: DEQ - Water Regional Office, Woodbridge
King George County Health Department
OWP - Central
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COMMONWEALTH of VIRGINIA

E. Anne Peterson, M.D., M.P.H.
COMMISSIONER

Department of Health
Office of Water Programs

ENVIRONMENTAL ENGINEERING FIELD OFFICE
400 S. MAIN ST. - 2ND FLOOR
CULPEPER, VA 22701
PHONE: 540-829-7340
FAX: 540-829-7337

CERTIFICATE TO OPERATE

Owner: Dahlgren Naval Surface Warfare Center

Facility/System Name: Dahlgren NSWC STW

VPDES Permit Number: VA0021067

Description of the Facility/System: This project involves the addition of constructed wetlands. The wetlands are intended as a final polishing process before UV disinfection and final discharge. No change in flow is involved.

Authorization to Operate: By letter dated May 10, 2000, W. Craig Hamilton, P.E. certified that the treatment works has been installed as per the approved plans and specifications for this facility. A CTO inspection was performed by VDH and the DEQ. The Owner is authorized to operate these facilities with the condition that an operation and maintenance manual will be submitted to the VDH for approval.

CONCURRENCE

Robert J. VanLier, P.E., Engineering Field Representative
State Department of Health

9/27/00 Date

ISSUANCE

_____ Date

Mr. Dennis Treacy, Director
Department of Environmental Quality

RJV/tjb
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COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
NORTHERN REGIONAL OFFICE
13901 Crown Court, Woodbridge, Virginia 22193
(703) 583-3800 Fax (703) 583-3821
www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

Thomas A. Faha
Regional Director

September 1, 2010

King George County
NSWC Dahlgren Modification to STP
PTL#24989, Permit VA0021067

Mr. William Rees
Construction Manager
Public Works Department (Bldg 182)
Naval Support Facility Dahlgren
18329 Thompson Rd
Dahlgren, VA 22448-5110

Dear Mr. Rees:

In accordance with 9VAC25-790-190 of the Commonwealth of Virginia's *Sewage Collection and Treatment Regulations*, this letter transmits the Certificate to Operate (CTO) for NSWC Dahlgren Modification to STP located in King George County. The CTO is being issued based on the Application for Certificate to Operate dated August 16, 2010, and received by this office on August 17, 2010 with supplemental information received August 24, 2010.

If you have any questions about this letter or the approval process, please contact me at (703)-583-3834 or alison.thompson@deq.virginia.gov.

Respectfully,

Alison Thompson
Water Permits Technical Reviewer

cc: VPDES Permit File VA0021067
VDH District Office, attn: Environmental Health Manager
King George County Local Building Official
W. Craig Hamilton Jr, AECOM, 1315 Franklin Rd, Roanoke, VA 24016

Attachment: CTO

Department of Environmental Quality
APPLICATION for CERTIFICATE TO OPERATE
Under the Sewage Collection and Treatment Regulations 9 VAC 25-790
and/or the Water Reclamation and Reuse Regulation 9 VAC 25-740

See instructions. Submit 1 copy of this form and any attachments. Form will expand as you enter information.

Project Title: (as it appears on plans) Modification to Sewage Treatment Plant P.E. Seal Date on Cover: July 20, 2007 Specifications Title and Date: Same as Above	
Location of Project: Naval Support Facility Dahlgren	County/City: King George Co.
Receiving Wastewater Collection System(s): N/A	
Receiving Sewage Treatment Plant(s): N/A	
PROJECT OWNER: United States Government	**RESPONSIBLE ENGINEER**
Owner Contact Name: William Rees, Government Representative	Name: W. Craig Hamilton, Jr. PE
Title: Construction Manager	Company Name: AECOM
Address: Public Works Department (Building 182) Naval Support Facility Dahlgren 18329 Thompson Road Dahlgren, Virginia 22448-5110	Address: 1315 Franklin Road Roanoke, Virginia 24016
Phone: 540-284-1063	Phone: 540-857-3207
Email: william.rees@navy.mil	Email: craig.hamilton@aecom.com
Owner Signature and Date: 8/16/2010	

PTL NUMBER FROM CERTIFICATE TO CONSTRUCT: **22997**

Attach Copy of the original Certificate to Construct if issued prior to November 9, 2008. If applicable, provide verification of compliance with any conditions in the Certificate to Construct.

Design Flow: (a) average daily flow (MGD): 0.72 (b) peak flow (MGD): 2.4
For sewage treatment plant, water reclamation or satellite reclamation projects, provide the VPDES/VPA Permit Number: VA0021067
Is a new Discharge Monitoring Report (DMR) or other monthly monitoring report required? Yes ☐ No X
For Pump Stations, Sewage Treatment Plants, and Reclamation Systems, check Reliability Class: I X II ☐ III ☐ NA ☐

Two options are provided for the Statement of Completion, depending on whether the project is being authorized under the Sewage Collection and Treatment Regulations, the Water Reclamation and Reuse Regulations, or BOTH. Please check the appropriate box and then provide signature and seal below as indicated.

X *The following statement of completion for issuance of a Certificate to Operate under the Sewage Collection and Treatment Regulations must be signed and sealed by the responsible engineer.* (DEQ will not conduct a confirming inspection.)

"The construction of the project has been completed in accordance with the referenced plans and specifications or revised only in accordance with 9 VAC 25-790-180.B, and inspections have been performed to make this statement in accordance with Section 9 VAC 25-790-180.C.1 of the Sewage Collection and Treatment Regulations."

COMMONWEALTH OF VIRGINIA
WALTER C. HAMILTON, JR.
Lic. No. 10335
8/2/10
PROFESSIONAL ENGINEER

W. Craig Hamilton, Jr.
Licensed Engineer's Signature and original seal (signed and dated)

☐ *The following statement of completion for issuance of a Certificate to Operate under the Water Reclamation and Reuse Regulation must be signed and sealed by the responsible engineer.* (DEQ will not conduct a confirming inspection.)

"The construction of the project has been completed in accordance with the referenced plans and specifications or revised only in accordance with 9 VAC 25-740-120-B.2.b. and inspections have been performed to make this statement in accordance with Section 9 VAC 25-40-120.B.3.a. of the Water Reclamation and Reuse Regulations."

Licensed Engineer's Signature and original seal (signed and dated)

For DEQ use only:

In accordance with *Code of Virginia* 1950, as amended, Title 62.1, Section 62.1-44.19, this form, signed by the appropriate DEQ representative, serves as the **Certificate to Operate** for the referenced project.

Alison Thompson		9/1/10	24989
Name	Signature	Date	CTO PTL Number

Department of Environmental Quality Authorized Representative

An Operation and Maintenance Manual must be submitted to the DEQ Regional Office in accordance with 9 VAC 25-790 for sewage treatment plants, 9 VAC 25-740 for water reclamation systems and satellite reclamation systems and VPDES or VPA permit requirements.

For pump stations, an Operation and Maintenance Manual must be maintained for the facility in accordance with 9 VAC 25-790, but is NOT to be submitted to DEQ. The pump station must be operated and maintained in accordance with that manual.

M E M O R A N D U M

DEPARTMENT OF ENVIRONMENTAL QUALITY
Northern Regional Office
13901 Crown Court **Woodbridge, VA 22192** **(703) 583-3800**

SUBJECT:	TOXICS MANAGEMENT PROGRAM (TMP) DATA REVIEW Naval Surface Warfare Center - Dahlgren (VA0021067)
REVIEWER:	Douglas Frasier
DATE:	27 April 2010
COPIES:	TMP file

PREVIOUS REVIEW: 14 January 2009

DATA REVIEWED:

This review covers the fifth annual chronic toxicity tests conducted in September 2009 for Outfall 001. The tests were performed on *M. bahia* and *C. variegates* using 24-hour composite samples of final effluent collected from the outfall.

DISCUSSION:

The results of these toxicity tests, along with the results of previous toxicity tests performed on effluent samples collected from Outfall 001 are summarized in Table 1.

The chronic toxicity of the effluent samples was determined with a 7-day static renewal survival, growth and fecundity chronic test using *M. bahia* and a 7-day static renewal survival and growth chronic test using *C. variegates*. The chronic tests yielded for both species a No Observed Effect Concentration (NOEC) of 100% effluent, greater than the IWC of 5%; thus, passing the chronic toxicity criteria.

These results indicate that the effluent samples from Outfall 001 exhibited no chronic toxicity to the test organisms.

RECOMMENDATION:

The permittee should continue biomonitoring of Outfall 001 with annual chronic toxicity tests in accordance with the terms of the permit.

Attachment 8

BIOMONITORING RESULTS

Naval Surface Warfare Center – Dahlgren (VA0021067)

Table 1
Summary of Toxicity Test Results for Outfall 001

TEST DATE	TEST TYPE/ORGANISM	IC_{25} (%)	48-h LC_{50} (%)	NOEC (%)	% SURV	REMARKS
02/09/95	Acute *M. bahia*		28.7		0	
02/09/95	Acute *C. variegatus*		>100		75	
02/07/95	Chronic *M. bahia*			10 G	0	
02/07/95	Chronic *C. variegatus*			30 SG	18	
04/27/95	Acute *M. bahia*		31.9		0	
04/27/95	Acute *C. variegatus*		>100		100	
04/25/95	Chronic *M. bahia*			10 G	0	
04/25/95	Chronic *C. variegatus*			30 G	78	
TMP monitoring commences 6 months after CTO 4/15/98						
9/24/98	Acute *M. bahia*		>100		100	1st Quarterly
9/24/98	Acute *C. variegatus*		>100		100	
9/22/98	Chronic *M. bahia*			100 SGF	93	
9/22/98	Chronic *C. variegatus*			100 SG	100	
12/17/98	Acute *M. bahia*		>100		100	2nd Quarterly
12/17/98	Acute *C. variegatus*		>100		100	
12/15/98	Chronic *M. bahia*			100 SGF	95	
12/15/98	Chronic *C. variegatus*			100 SG	100	
3/11/99	Acute *M. bahia*		>100		100	3rd Quarterly
3/11/99	Acute *C. variegatus*		>100		100	
3/9/99	Chronic *M. bahia*			100 SG 10 F	98	
3/9/99	Chronic *C. variegatus*			100 SG	100	
6/24/99	Acute *M. bahia*		94.9		45	4th Quarterly
6/24/99	Acute *C. variegatus*		>100		100	
6/22/99	Chronic *M. bahia*			10 SGF	5	
6/22/99	Chronic *C. variegatus*			100 SG	90	
10/28/99	Acute *M. bahia*		>100		95	1st annual
10/26/99	Chronic *M. bahia*			100 SGF	90	
Permit Reissued February 28, 2000						
5/25/00	Acute *M. bahia*		>100		100	1st annual
5/23/00	Chronic *M. bahia*			100 SGF	98	
5/17/01	Acute *M. bahia*		>100		100	2nd annual
5/17/01	Acute *C. variegatus*		>100		100	
5/15/01	Chronic *M. bahia*	>100	>100	100 SGF	100	
5/15/01	Chronic *C. variegatus*	>100	>100	100 SG	95	
7/20/02	Acute *M. bahia*		>100		100	3rd annual
7/16/02	Chronic *M. bahia*	>100	>100	100 SGF	100	

TEST DATE	TEST TYPE/ORGANISM	IC_{25} (%)	48-h LC_{50} (%)	NOEC (%)	% SURV	REMARKS
11/21/02	Acute *M. bahia*		>100		100	Extra test after spray of herbicide
11/19/02	Chronic *M. bahia*	>100	>100	100 SG	98	No egg produced in the control
05/07/03	Acute *M. bahia*		>100		100	4th annual
05/06/03	Chronic *M. bahia*	>100	>100	100 SG	100	
05/12/04	Acute *M. bahia*		>100		100	5th annual
05/11/04	Chronic *M. bahia*	>100G 56.4 F	>100	100 SGF	90	
Permit Reissued 31 May 2005						
09/27/05	Chronic *M. bahia*	>100	>100	100 SGF	100	1st annual
09/27/05	Chronic *C. variegatus*	>100	>100	100 SG	100	
10/17/06	Chronic *M. bahia*	>100	>100	100 SGF	100	2nd annual
10/17/06	Chronic *C. variegatus*	>100	>100	100 SG	100	
9/18/07	Chronic *M. bahia*	>100	>100	100 SGF	100	3rd annual
9/18/07	Chronic *C. variegatus*	>100	>100	100 SG	100	
11/18/08	Chronic *M. bahia*	>100	>100	100 SGF	85	4th annual
11/18/08	Chronic *C. variegatus*	>100	>100	93 SG	93	
09/22/09	Chronic *M. bahia*	>100	>100	100 SGF	90	5th annual
09/22/09	Chronic *C. variegatus*	>100	>100	100 SG	98	

ABBREVIATIONS:

S – Survival; G – Growth; F – Fecundity

% SURV - Percent survival in 100% effluent

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater into a water body in King George County, Virginia.

PUBLIC COMMENT PERIOD: February 11, 2011 to 5:00 p.m. on March 14, 2011

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: Naval Support Facility Dahlgren STP
18329 Thompson Road, Suite 226
Dahlgren, VA 22448
VA0021067

NAME AND ADDRESS OF FACILITY: Naval Support Facility Dahlgren STP
18329 Thompson Road, Building 229
Dahlgren, VA 22448

PROJECT DESCRIPTION: Naval Support Facility Dahlgren STP has applied for a reissuance of a permit for the federal Naval Support Facility Dahlgren STP. The applicant proposes to release treated sewage wastewaters from residential areas at a rate of 0.72 million gallons per day into a water body. Sludge from the treatment process will be disposed by landfill. The facility proposes to release the treated sewage in the Upper Machodoc Creek in King George County in the Potomac watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, BOD, Total Suspended Solids, Ammonia, Dissolved Oxygen, Total Nitrogen, Total Phosphorus and Enterococci.

This facility is subject to the requirements of 9 VAC 25-820 and has registered for coverage under the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the documents at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.

Name: Douglas Frasier
Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193
Phone: (703) 583-3873 E-mail: Douglas.Frasier@deq.virginia.gov Fax: (703) 583-3821

Revised 2/2003

State "Transmittal Checklist" to Assist in Targeting
Municipal and Industrial Individual NPDES Draft Permits for Review

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name: Naval Support Facility Dahlgren Sewage Treatment Plant
NPDES Permit Number: VA0021067
Permit Writer Name: Douglas Frasier
Date: 31 August 2010

Major [ ] **Minor** [X] **Industrial** [ ] **Municipal** [X]

I.A. Draft Permit Package Submittal Includes:	**Yes**	**No**	**N/A**
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?	X		
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?			X
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?	X		
8. Whole Effluent Toxicity Test summary and analysis?	X		
9. Permit Rating Sheet for new or modified industrial facilities?			X

I.B. Permit/Facility Characteristics	**Yes**	**No**	**N/A**
1. Is this a new or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet **or** permit contain a description of the wastewater treatment process?	X		
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		X	
5. Has there been any change in streamflow characteristics since the last permit was developed?		X	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?		X	
7. Does the fact sheet **or** permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water?	X		
a. Has a TMDL been developed and approved by EPA for the impaired water?	X		
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?			X
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?	**TBD**		
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?		X	
10. Does the permit authorize discharges of storm water?		X	

Attachment 10

I.B. Permit/Facility Characteristics – cont.	Yes	No	N/A
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?	X		
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?	X		
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?	X		
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		

Part II. NPDES Draft Permit Checklist

Region III NPDES Permit Quality Checklist – for POTWs

(To be completed and included in the record only for POTWs)

II.A. Permit Cover Page/Administration	**Yes**	**No**	**N/A**
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.B. Effluent Limits – General Elements	**Yes**	**No**	**N/A**
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether "antibacksliding" provisions were met for any limits that are less stringent than those in the previous NPDES permit?			X

II.C. Technology-Based Effluent Limits (POTWs)	**Yes**	**No**	**N/A**
1. Does the permit contain numeric limits for ALL of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS, and pH?	X		
2. Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?	X		
a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved?			X
3. Are technology-based permit limits expressed in the appropriate units of measure (e.g., concentration, mass, SU)?	X		
4. Are permit limits for BOD and TSS expressed in terms of both long term (e.g., average monthly) and short term (e.g., average weekly) limits?	X		
5. Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day average and 45 mg/l BOD5 and TSS for a 7-day average)?		X	
a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations?			X

II.D. Water Quality-Based Effluent Limits	**Yes**	**No**	**N/A**
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL?			X
3. Does the fact sheet provide effluent characteristics for each outfall?	X		
4. Does the fact sheet document that a "reasonable potential" evaluation was performed?	X		
a. If yes, does the fact sheet indicate that the "reasonable potential" evaluation was performed in accordance with the State's approved procedures?	X		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?			X
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have "reasonable potential"?	X		
d. Does the fact sheet indicate that the "reasonable potential" and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)?			X
e. Does the permit contain numeric effluent limits for all pollutants for which "reasonable potential" was determined?	X		

II.D. Water Quality-Based Effluent Limits – cont.	Yes	No	N/A
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established?	X		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the record indicate that an "antidegradation" review was performed in accordance with the State's approved antidegradation policy?	X		

II.E. Monitoring and Reporting Requirements	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?		X	
3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements?		X	
4. Does the permit require testing for Whole Effluent Toxicity?	X		

II.F. Special Conditions	Yes	No	N/A
1. Does the permit include appropriate biosolids use/disposal requirements?	X		
2. Does the permit include appropriate storm water program requirements?			X

II.F. Special Conditions – cont.	Yes	No	N/A
3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	X		
5. Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]?		X	
6. Does the permit authorize discharges from Combined Sewer Overflows (CSOs)?		X	
a. Does the permit require implementation of the "Nine Minimum Controls"?			X
b. Does the permit require development and implementation of a "Long Term Control Plan"?			X
c. Does the permit require monitoring and reporting for CSO events?			X
7. Does the permit include appropriate Pretreatment Program requirements?			X

II.G. Standard Conditions	Yes	No	N/A
1. Does the **permit** contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?	X		

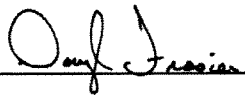
List of Standard Conditions – 40 CFR 122.41

Duty to comply	Property rights	Reporting Requirements
Duty to reapply	Duty to provide information	Planned change
Need to halt or reduce activity not a defense	Inspections and entry	Anticipated noncompliance
	Monitoring and records	Transfers
Duty to mitigate	Signatory requirement	Monitoring reports
Proper O & M	Bypass	Compliance schedules
Permit actions	Upset	24-Hour reporting
		Other non-compliance

2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]?	X		

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	Douglas Frasier
Title	VPDES Permit Writer, Senior II
Signature	
Date	31 August 2010